RUBBER and PLASTICS WEEKLY

VOLUME 161 NO. 23 DECEMBER 9 1961 ONE SHILLING

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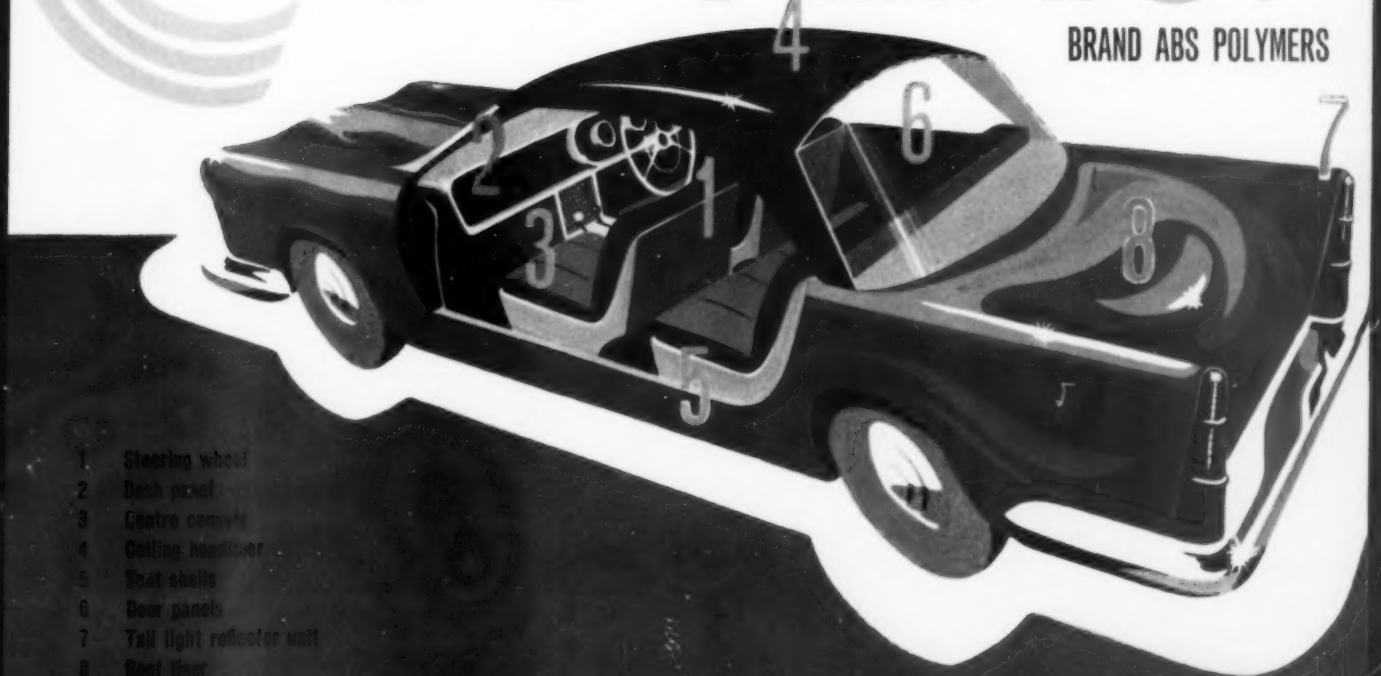

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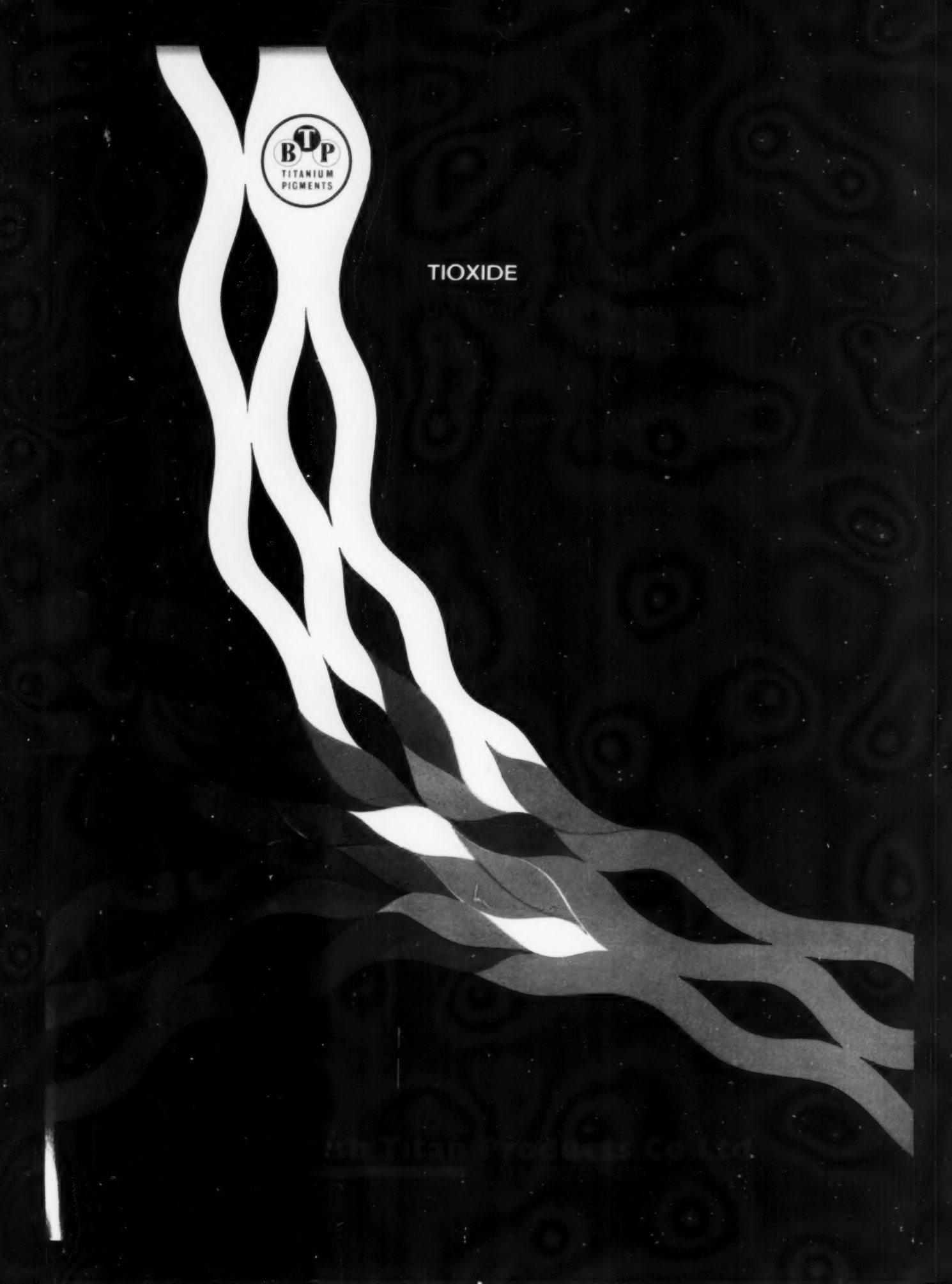
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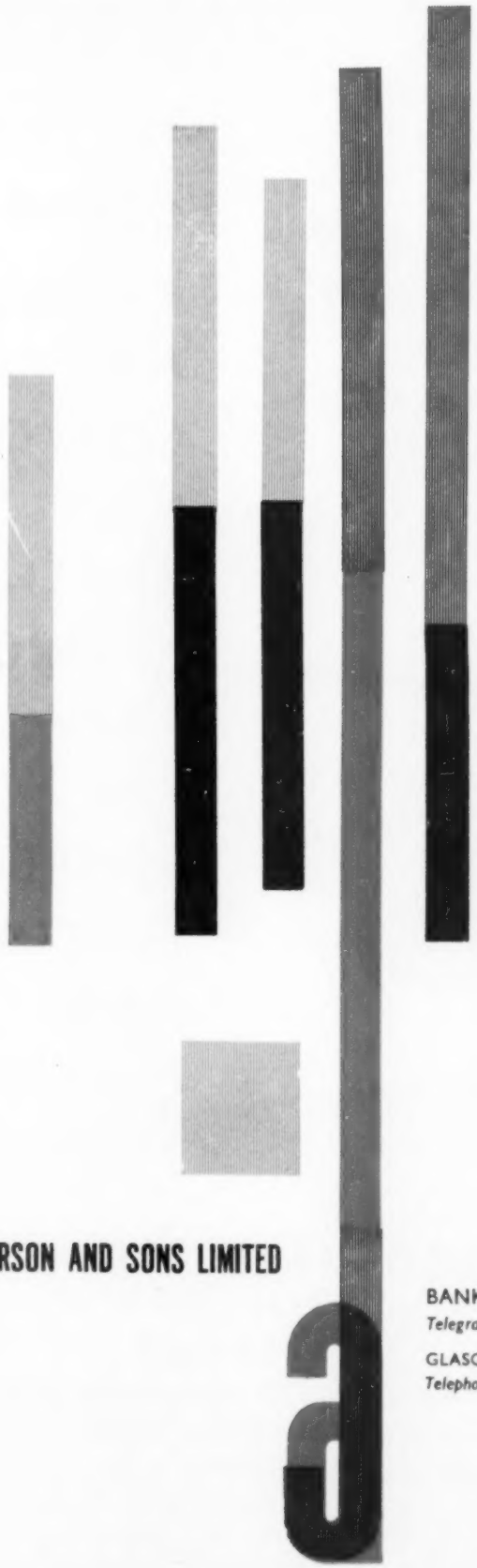

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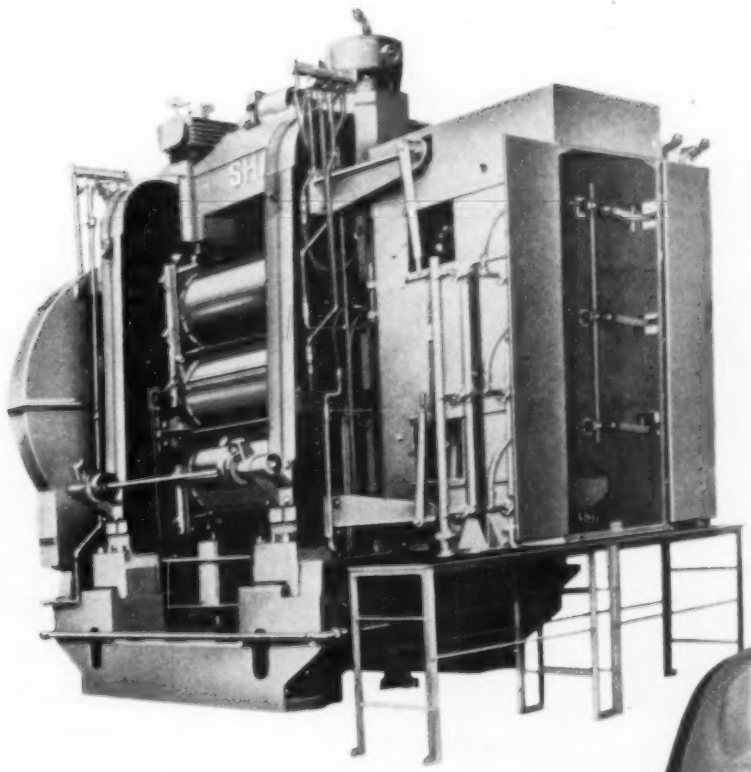

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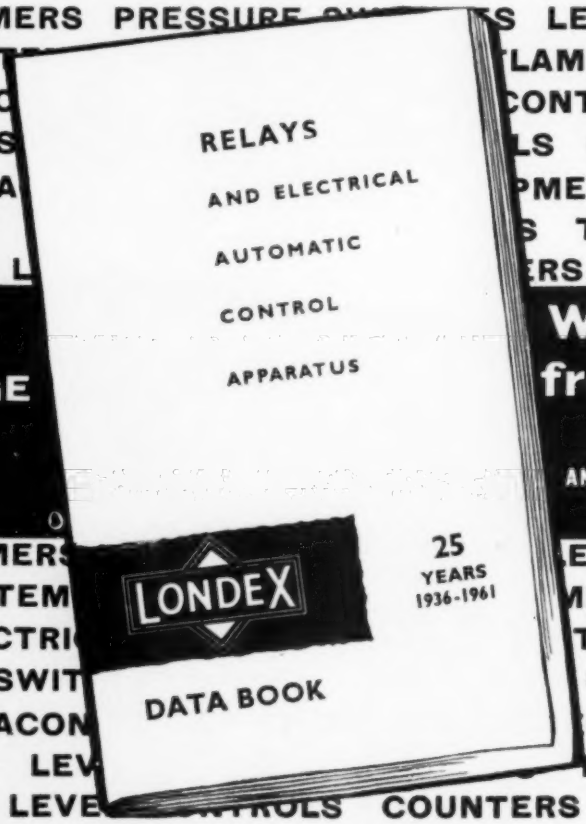

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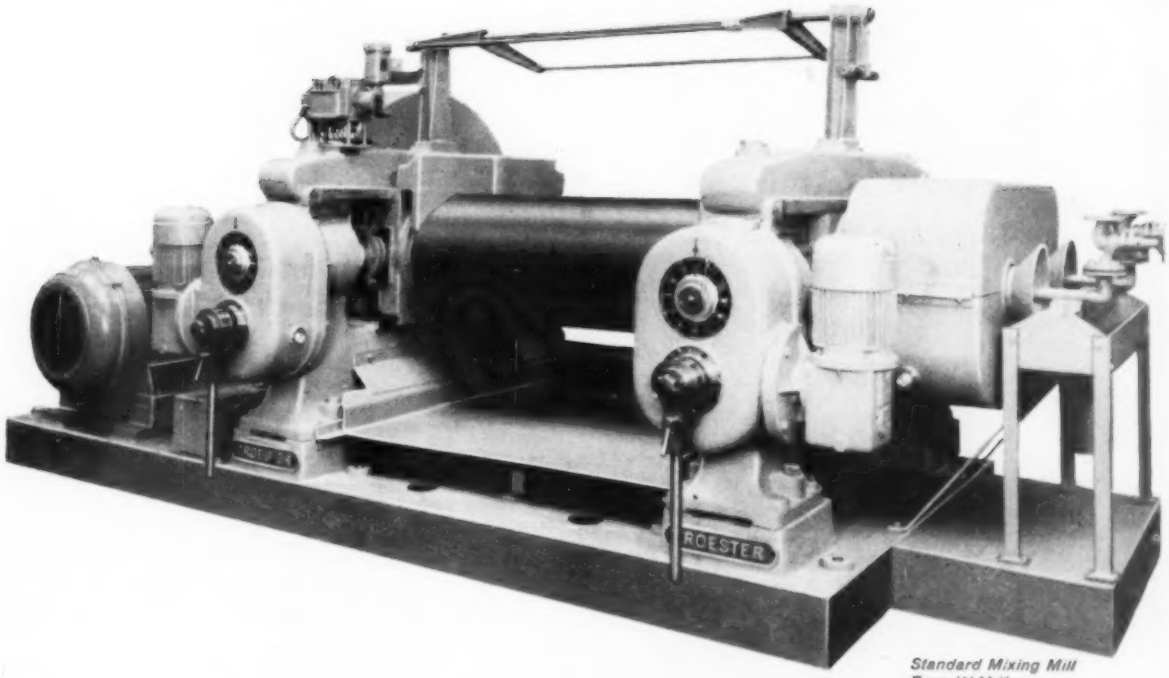

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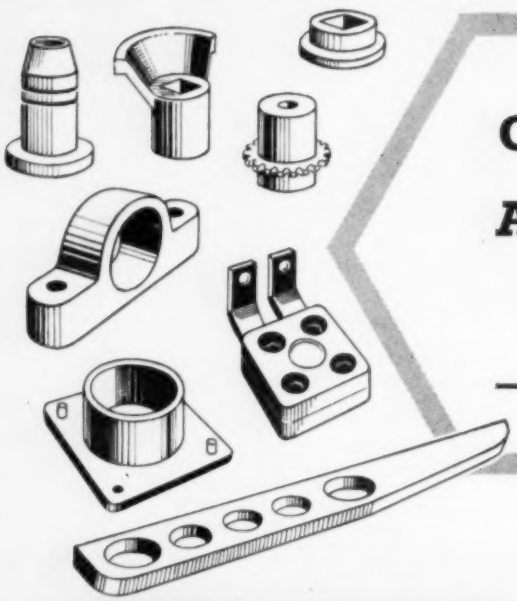

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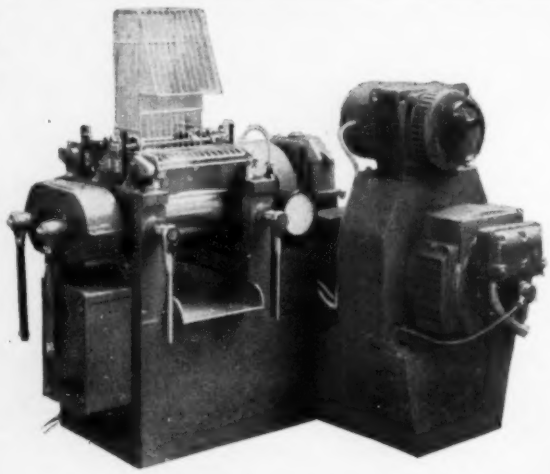

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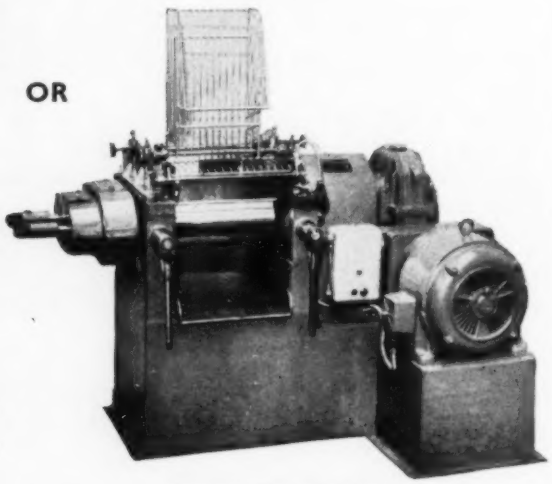

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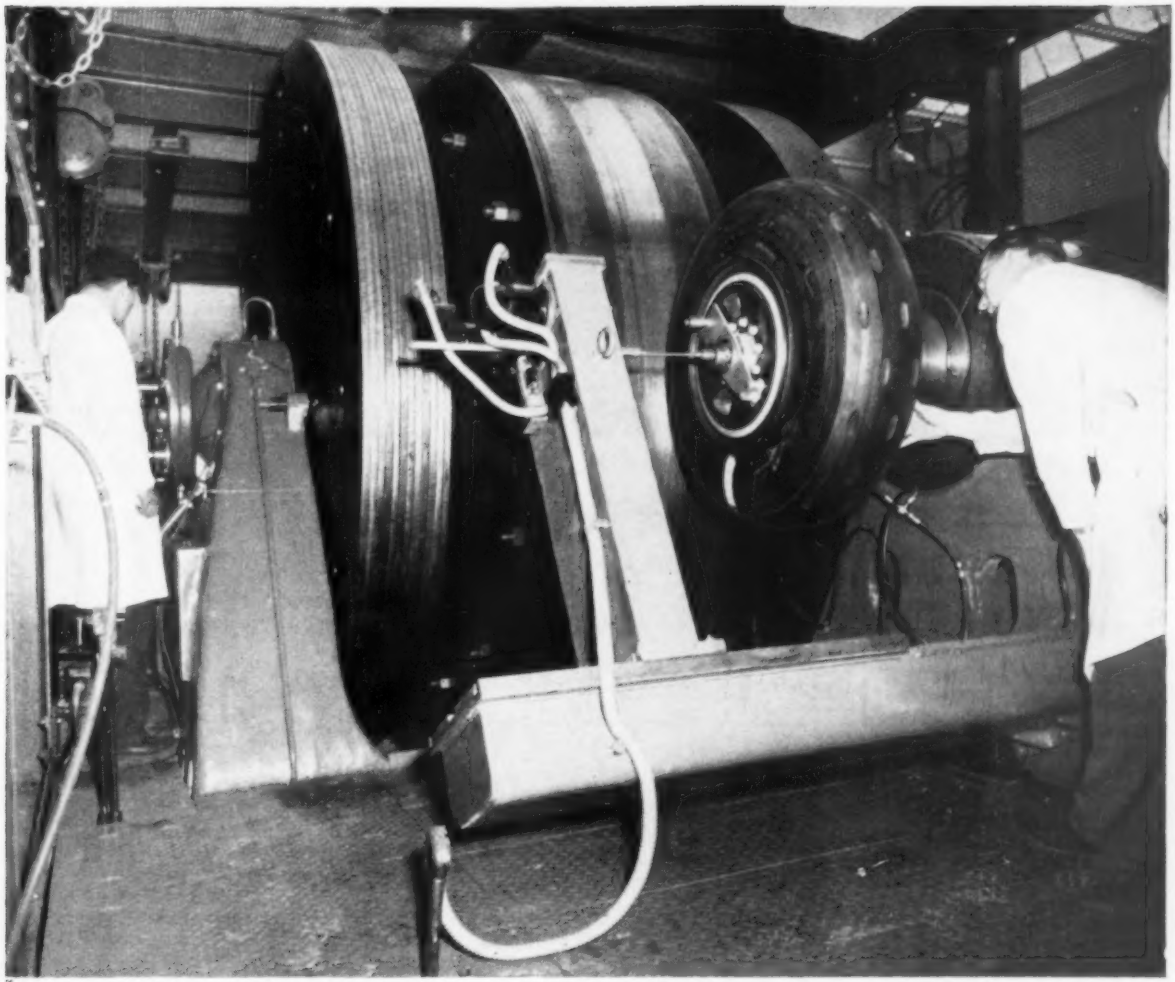

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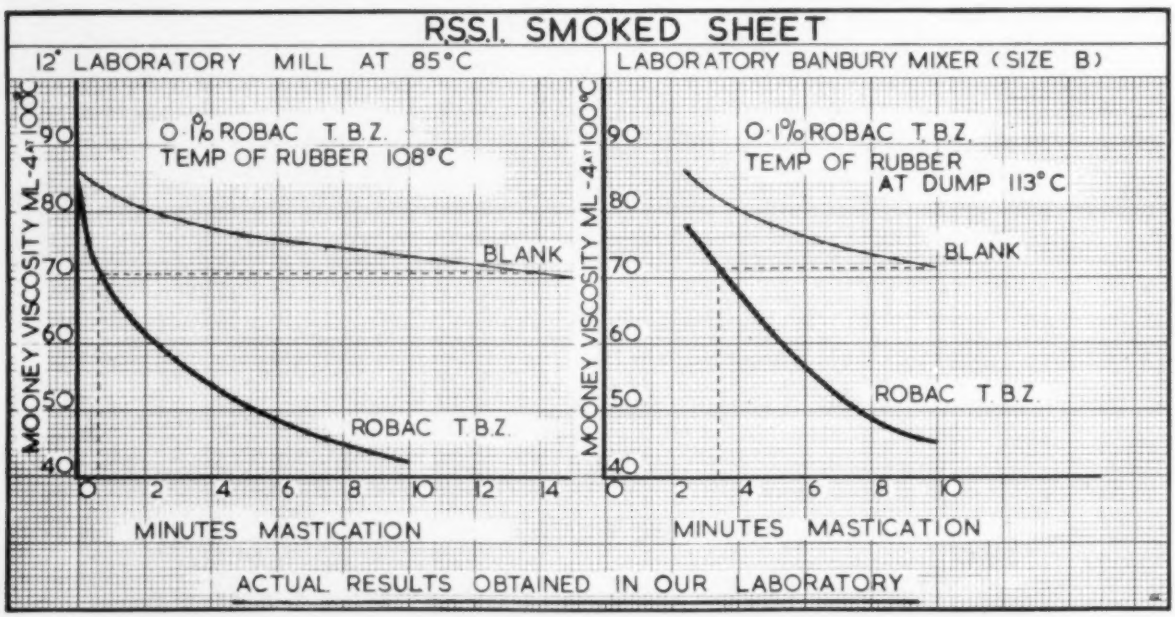

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RUBBER and PLASTICS WEEKLY

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Volume 141 *IN ITS 78th YEAR* No. 24

December 9 1961

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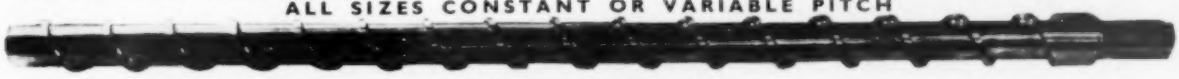

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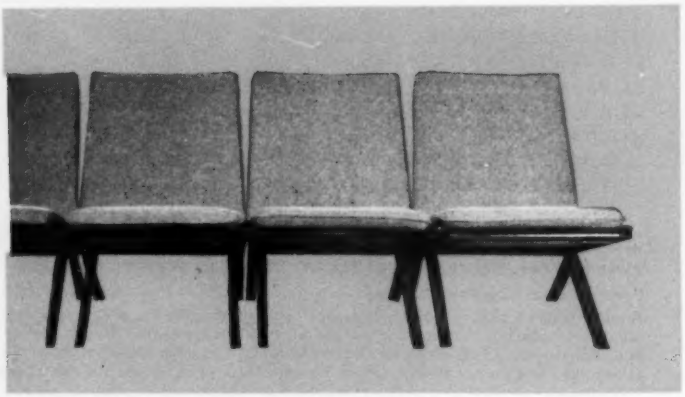

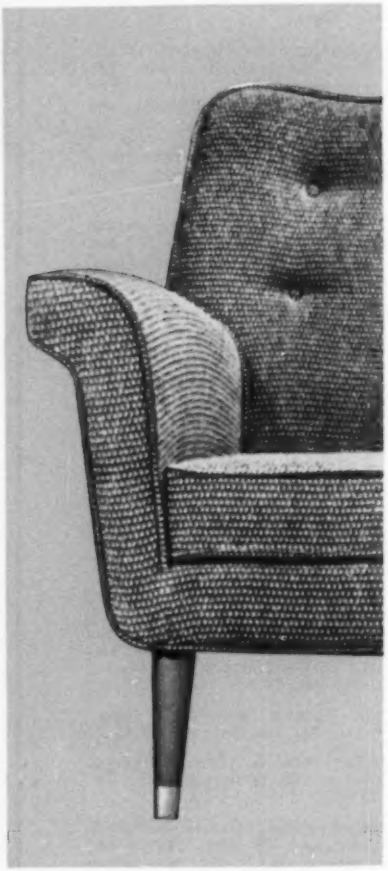

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NOTES of the WEEK

More than Estimates

THE fact that the number of trained rubber and plastics technologists is insufficient to meet the demands of industry has given rise to much activity. Unfortunately most of this has been in the field of estimating how much worse the position will be in five, ten or fifteen years' time. Estimates are necessary — but they need to be followed by action. In the particular instance of the National College of Rubber Technology, no-one can grumble at the Ministry of Education. The Ministry, as was stated at the NCRT's eighth convocation last week, has approved plans which will quadruple the size of the college and give it facilities in keeping with the high standard of training and education it achieves. But, in general, more facilities to train should be made available in more places to provide more technologists — otherwise our industries will tend to expand beyond the number of people equipped to run them.

Exactly a year ago, commenting on the seventh convocation of the National College, a reference to plastics technology courses led us to speculate whether there might be a new name as well as new buildings. So naturally we were glad to hear the head of the college, Dr Cotton, suggesting last week that it might be re-named the National College of Polymer Technology (see page 940). Fifty years ago the first rubber classes were held at Holloway Road. Since that time — when the only equipment was a mill, an old vulcanizing pan and a Schopper testing machine — the college has gained an international reputation, and with the new extensions it is looking forward to an even more important future. Changing NCRT to NCPT would be a fitting mark of this — and the new name would be a more accurate reflection of the central place that the college will occupy in the educational structure of both the rubber and the plastics industries.

The Cost of Selling

THE cost of advertising is a widely discussed topic — which has been tossed about in the news recently — but the cost of selling never seems to evoke the same amount of publicity. Yet selling takes a good slice of the budgets of rubber and plastics companies: and in fact UK companies (in all industries) spend as much on running their sales forces as they do on Press and TV advertising. This enormous sum of over £350m. is one of industry's major costs. But as any salesman — and his sales manager — knows, a representative spends only 10% of his time selling. The remaining 90% is spent in travelling, waiting, reporting, discussing the weather and the client's personal problems. Pushing up sales often depends on pushing up selling time — and making sure it is being used efficiently. The salesman is on his own most of the time and has to control his own work. Therefore he must have more than drive and a pleasant personality. He must have a flair for organization, so that the most is made of that very highly priced selling time.

As a recent study session of the London School of Marketing showed, the real remedy lies in selecting the right type of salesman in the first place, and making sure that he is trained properly. Training should, we think, be given within the company and not by an outside body — providing the trainers have been taught how to to train. But staff selection, which must surely qualify for the position of the most haphazard process in business, should have outside advice. If it makes that 10% into even 11% or 12%, it will repay itself many times over.

Diversification

DIVERSIFICATION is becoming more and more important in our industries. Recently I.C.I. decided to build its own distillation plant for crude oil; working in the opposite direction Distillers acquired the whole of the capital of the British Xylonite Group. Dunlop now sells angling equipment; and there have been several links between plastics firms and building concerns.

Many odd things are done in the name of diversification. One of the strangest to come our way recently is the acquisition by a well-known supplier to the polymer industry of a barge company. Like most such moves, however, it is only strange on the surface. The barges — run by G. D. Holmes Ltd. — are an important link in the transportation of raw materials by Laporte Industries Ltd. They transfer ilmenite along the Humber to Stallingborough where it is manufactured into titanium dioxide — and where, incidentally, production of this pigment is expected to reach 50,000 tons a year when the current £3m. extensions are completed. Other firms are also served by the barges, which means that this form of diversification has led to Laporte Group now being concerned with such odd barge fellows as bacon, glucose — and water. The water is supplied by a Holmes company from two tank barges to steamers and motor boats using the port of Goole.

NEWS *Briefs*

PAKISTAN TO PLANT RUBBER—ETHYLENE PLANT AT FRANKFURT—FIRESTONE NORWAY CONTRACT MEXICAN PLASTICS PLANT—POLYMER IN JAPAN

●**Japan** — Polymer Corp. is to open a new office in Tokyo, Japan. It will be managed by Victor Rochon and will operate in the same way as Polymer's London and Vienna offices. The office will provide assistance and information on both technical and commercial matters.

●**West Germany** — The demonstration vehicle containing a machine for the cleaning and polishing of rubber moulds, and a machine for the preparation of metal surfaces prior to rubber or plastics bonding, from Abrasive Developments Ltd. (*RPW* October 21, 610), which is making a year's tour of Europe, is said to have gained orders worth some £26,000 during its three week's in Germany. The vehicle is now on a three weeks' tour of Belgium, Holland and France.

●**Mexico** — Petro-Derivados S.A. de C.V., Mexico City, is constructing a factory for the production of raw materials for the plastics industry. The machinery, equipment and technical know-how is to be supplied by a European manufacturer who has not been named. This factory is not expected to be in production until early 1963.

●**Japan** — Tokyo Spinning Co. proposes to produce a new textile fibre of the polyester group under a technical tie-up with the Goodyear Tyre Co. (USA) and Nippon Rayon Co. has a similar plant in collaboration with a Swiss firm. Hitherto, only Teikoku and Toyo Rayon were producing these fibres with technical assistance from I.C.I.

●**Norway** — A technical assistance agreement for the manufacture of tyres and varied rubber products has been signed by the Firestone Tire and Rubber Co. and Aktieselskabet Askim Gummivarefabrikin, Askim, Norway. The Norwegian company will continue to produce tyres under the Viking brand and will also make Firestone tyres. Firestone has had its own outlets in Norway for the distribution of tyres and other products which will now be manufactured for them by Askim.

●**Ceylon** — India has agreed to buy from Ceylon 1,500 tons of rubber and other products, under a trade agreement signed between the two countries last month, according to a press report from Colombo.

●**Pakistan** — On his arrival in Kuala Lumpur, Malaya, Mr Abdul Kassem Khan, Pakistan's Minister for Industries, said that Pakistan is to start the planting of rubber. He said that the main purpose of his visit was to study the techniques of Malayan rubber plantations. 'We have plans to start planting rubber in Pakistan on a moderate scale for a start. I think the climatic conditions in Pakistan and Malaya are about the same and I think we can succeed', he said.

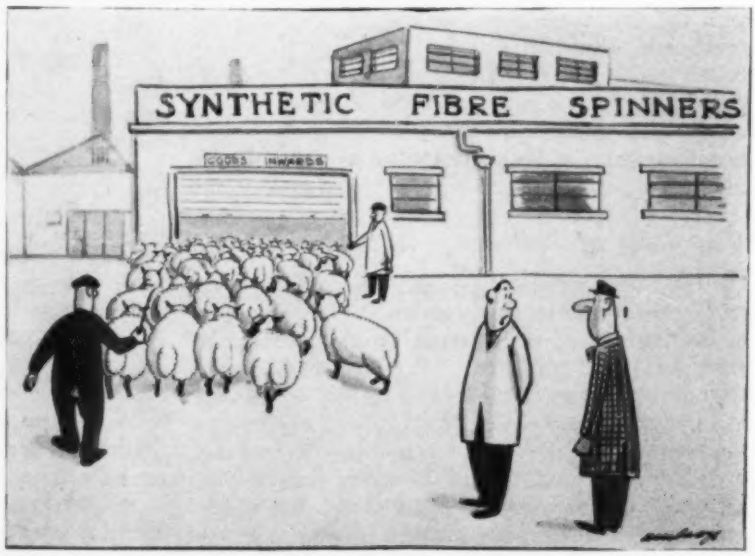
●**Africa** — A series of 'wildcat' strikes by African factory workers in Bulawayo during the past two weeks came to an end last week. The biggest strike was at the Dunlop organization, who recently dismissed 500 strikers and closed down the factory for an advanced two-week Christmas holiday. Workers' spokesmen said the sudden strikes were for higher wages.

●**Western Germany** — M. W. Kellogg Co., New York, and its UK subsidiary, Kellogg International Corp., have won a contract to engineer a new ethylene installation for the refinery near Frankfurt of Caltex Oil (Germany) GmbH, a member of the Caltex group. The new ethylene installation will consist of a 70,000 tonne-a-year ethylene plant, a 13m. standard cu. ft. per day hydrogen plant, and a pyrolysis naphtha hydro - treating plant. It is scheduled for completion in the autumn of 1963.

●**South Africa** — Turner and Newall is to start work immediately on expanding the scope of its subsidiary in South Africa, Turners Asbestos Products (Pty.), at a cost of £750,000. A factory is to be built in Durban for the manufacture of asbestos cement sheeting and also asbestos cement pipe.

●**Japan** — The Japan Synthetic Rubber Co. — a semi-official corporation — has signed a contract to export 500 tons of synthetic rubber to mainland China with the Chinese Export and Import Corporation of chemical products. The company declined to give the contract price but said shipment would be made in the next two weeks to Shanghai.

●**United States** — A new plant with capacity for producing more than 10,000 tons a year of Allied Chemical's Genetron fluorinated hydrocarbons has been completed at Elizabeth, New Jersey. This is the third such facility to be constructed by Allied. Other plants are in Baton Rouge, Louisiana, and Danville, Illinois. One growing outlet for fluorinated hydrocarbons is as a blowing agent for rigid and flexible urethane foams.



'Course we do — how else would anybody get a blended fabric?' — 566

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- *leakage prevention*
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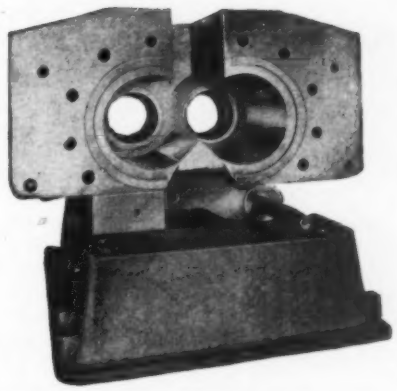
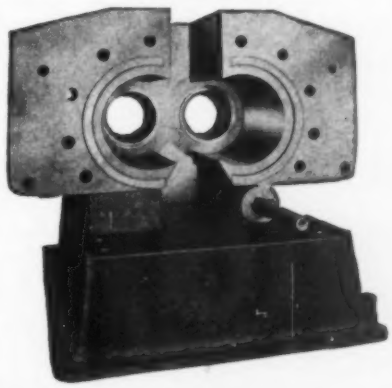
Here's a new development in Banbury mixer design: the hydraulically operated drop-door . . . now available as an optional feature on all new production-size machines. The drop-door design does away with a source of leakage and contamination which cannot be avoided in sliding-door design. Clearances which permit some leakage are required for sliding action which is not the case with the drop-door. The new door is hinged, and the surfaces of the door edge and the bottom of the mixing chamber are tapered so that a good line of contact is obtained. The door is leakproof throughout a full period of normal wear and there are no tailings left to contaminate a succeeding batch. The new door has been clocked as low as eight seconds for opening, discharge and closing—more than twice as fast as a sliding door. As a result, the overall mixing cycle is reduced. And, in short-cycle operation, discharge time is in better balance with actual mixing time.

Faster discharge, besides cutting cycle time, is particularly advantageous when formulas require almost instantaneous discharge after pre-determined temperature is reached. With some, a few seconds lag will permit the stock to set up in the mixing chamber.

* *Banbury is a registered trade mark in many countries throughout the world*



Chamber of Banbury with drop door in closed position



Drop door partially open

Angular view of drop door in open position

Size 11 D-High Pressure high horsepower uni-drive Banbury Mixer with drop type discharge door.

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Kays Plans Macclesfield Factory

TO REPLACE BURNT-OUT NEW MILLS PLANT

SEVEN weeks after the £100,000 fire which destroyed Woodside Mill, New Mills, Derbyshire, taking away five-sixths of Kay Brothers Plastics Ltd.'s foam converting capacity, the firm has obtained new premises in Cheshire. (*RPW* October 21, 607.)

Kays, a Reckitt and Colman company manufacturing expanded polyurethane foams, says that it has 'largely recovered' its lost production, and the new premises, at Hazel Grove, three miles from its main factory at Marple, Cheshire, will enable it to extend its service.

It is being rented temporarily by Kays and will be used to tide the company over until a completely new factory is built shortly in the Macclesfield area. Plans for this new factory are nearing completion.

New Converting Equipment

The foam manufacturing plant at Marple was unaffected by the fire and since then all the converting has been carried out there by round-the-clock working. The factory at Hazel Grove is on the main Stockport-Macclesfield road and is a single-storey building of 30,000 sq. ft.

It became fully operative on Monday (December 4) and employs between 100 and 150 people. Arthur Smith, works superintendent, is in charge and new converting equipment has been installed to replace plant lost in the New Mills fire, which included cutting and profiling equipment and expensive foamback machinery flown in from America. The manufacture of block foam and its conversion into sheets is still being carried on at Marple, but all other activities, including the production of foam cushions, car components, etc., have been transferred to Hazel Grove.

Kays are large suppliers of plastics foam to the motor, furniture, leather goods, packaging, aircraft and textile trades.

So hot it boils water, a B-70 airplane tyre is ready for a simulated landing on a test wheel at the B. F. Goodrich Co. testing laboratory. To prove the tyre's ability to stand the heat generated by air friction at three times the speed of sound, it was exposed to temperatures of 360 F. for several hours, then 'landed' while still hot.

See news story on page 956

Pipe Factory Extension

DURAPIPE AND FITTINGS LTD. has obtained planning permission for a £50,000 extension to its thermoplastic pipe and fittings factory at West Drayton, Middlesex.

The extension, which will enable Durapipe to increase by four times its present output of moulded pipe fittings, is due for completion by the end of March 1962.

This year, the company, one of the Incledon and Lamberts group, states that it has installed a number of new moulding machines to help cope with 'the rapidly growing demand for its fittings from both the home market and overseas'. More plant is on order.

During the past six months, export of Durapipe's range of nearly 500 different fittings for abs and pvc pipe of ½in. to 6in. bore rose by more than 50% over the same period last year.

Stockpile Activity

SALES from the Board of Trade stockpile in November totalled 745 tons for delivery as follows: November 190 tons; December 70 tons; and January 485 tons. 25,510 tons of rubber were available for sale on December 1.

On December 1 the Rubber Trade Association was advised by the Board of Trade that the rubber from the Government stockpile for the month of December at under 27d. per lb. had been disposed of. Supplies are still available at 27d. per lb. and over. (The Board of Trade on October 27 announced that sales of rubber from the stockpile would be made without limit except that not more than 1,000 tons would be sold in any month at a price of less than 27d. per lb.)

US Sales

In Washington the General Services Administration has announced that in November 4,282 long tons of crude natural rubber from the US national stockpile were sold. The November sales were the first made by the GSA under the new one-year programme to sell the rubber at market prices but to limit the total sold in any one month to 5,000 tons when prices received were below 32 cents per lb. In October this year, the GSA sold 828 tons. Prior to the adoption of the new sales plan, the GSA made no sales under 30 cents per lb. and limited sales until prices reached 36 cents per lb.

The GSA said that approximately 123,575 tons had been sold from October 16 1959, when sales began, up to November 30 1961.

It added that of the 4,282 tons of rubber sold between November 1 and 20, delivery from Government warehouses was scheduled as follows: November 1961 — 752 long tons, December 1961 — 1,163 tons, January 1962 — 1,780 tons, February 1962 — 587 tons.

Thermaflex Ducting for Air-conditioning

WHAT is said to be a unique type of ducting for use in air-conditioning and ventilation has been developed by the Glasgow firm of Flexible Ducting Ltd.

The company states that in meeting demand priority has been given to exports, orders having already been received from Switzerland, Scandinavia, Germany and Italy.

Made by special automatic machinery designed and built by the company for the purpose, the new Thermaflex ducting is lightweight and so flexible that it can be bent to half its own diameter without loss in cross-sectional area. It can be cut or connected without the need for special fittings, clamps or elbows.

Designed specifically to meet the technical requirements of any air-conditioning or ventilation systems, it is being made in a range of sizes from 3in. to 8in. in diameter in lengths of 12ft. Larger diameters are available in shorter lengths.

ISO Plastics Recommendations

FOUR MORE TESTING METHODS

FOUR more recommended methods of test for plastics will be published soon by the International Standards Organization (ISO), a result of the eleventh meeting of the technical committee on plastics (ISO/TC61) which took place recently in Turin.

The recommendations are concerned with: (1) determination of thermal stability of pvc and related copolymers and their compounds by the discoloration method; (2) determination of Vicat softening point; (3) determination of viscosity number of polyamide resins in dilute solution; and (4) determination of acetone-soluble matter of phenolic moulding materials.

New Working Group

One hundred and twenty-five delegates from 16 countries attended the meeting; observers from the International Union of Pure and Applied Chemistry, the International Electrotechnical Commission and the International Plastics Congress were also present. The committee's ten working groups held 19 sessions and discussed about 50 of the items currently listed on the programme of work.

A new working group on cellular plastics materials held its first meeting and decided to begin work on methods of test on these materials in the rigid state.

Four proposed test methods were approved by the committee and will now go before ISO member bodies, as new draft ISO recommendations, for their consideration. These are: (1) testing of plastics with the torsion pendulum; (2) determination of relative viscosity of polyamide resins in concentrated solution; (3) determination of percentage of monomer and low molecular weight polymer in polyamide resins; and (4) determination of change of mechanical properties after contact with chemical substances.

Thirteen ISO recommendations prepared by ISO/TC 61 were published during the past year and one (list of equivalent terms) is in page proof ready for printing. This brings the total number of ISO recommendations for plastics to 23.

The next meeting of the committee will take place in Warsaw in September 1962.

New Adhesive from Evode

The Industrial Adhesives Division of Evode Ltd., Stafford, has produced a new adhesive for the textile industry.

Evo-Stik Impact Adhesive 6108, is a one part rubber/resin formula and is recommended for bonding polyurethane foam to fabrics and for fabric combining in general.

It is resistant to water, oil and high temperature and to all solvents used in dry-cleaning. Garments made from combined materials can therefore be effectively cleaned by normal processes without fear of adhesive breakdown.

New Semflex Colours

Semtex Ltd. has introduced a new range of 16 trend-setting colours in its Semflex flooring.

Chosen by Semtex's colour consultant, Gaby Schreiber, the colours fall into three groups; bright, muted and neutral. This flooring is manufactured from pvc resins reinforced with asbestos fibres. Because of its extra flexibility, it can be laid over boarded floors as well as concrete foundations.

Exhibition to Move

The Laboratory Apparatus and Materials Exhibition, which has been held for two years at the Royal Horticultural Society's New Hall, London, W.1, is to be transferred to Earl's Court in 1963. This decision to move will treble the available stand space. Labex, as it will then be officially known, will thereafter be held in alternate years.

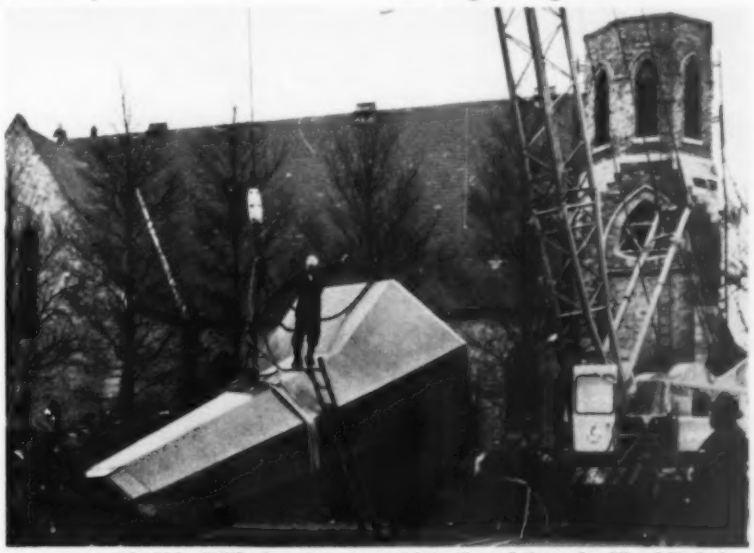
Ventilate that Fire

THE problem of controlling fires in the rubber industry is being tackled with automatic fire ventilation systems. At a recent industrial film premiere of 'Lessons Learned in Large Loss Fires', produced by Colt Ventilation Ltd., W. H. Webb, chief fire officer, Goodyear Tyre and Rubber Co. Ltd., and vice-president of the British Fire Services Association, spoke on fires in the rubber industry.

He said that crude and synthetic rubber was highly inflammable and with this high fire risk there was the creation of dangerous smoke. Smoke which rose and spread rapidly could cause panic to begin with and then, as it accumulated, could hide the actual fire from view so that the centre could only be located with extreme difficulty.

He declared that the Goodyear Wolverhampton fire in 1957 was caused partly by the absence of controlled ventilation. During the fire it was decided to fully ventilate the basement. There was no spread of fire as the result of this decision but the volumes of smoke were considerably abated, enabling four jets to work close up to the seat of the fire.

Points emerging from the film are that fire ventilation removes the smoke so that the actual fire is visible at all stages; it prevents high level heat spread; it removes the unburned gas, and reduces the risk of explosion; it causes cooler air to be drawn towards the fire from surrounding areas; it causes more complete combustion so that far less smoke and unburned gas are generated.



Damage to this 50ft. GRP church spire, which slipped from its jib while being installed at St. Paul's Church, Smethwick, Birmingham, was swiftly repaired on the spot by the manufacturers, Brylan Plastics, using Deeglas glass fibre

200psi Blown Containers

EMERSON WALKER CHARACTERIZATION TESTS

PLASTICS containers, capable of withstanding pressures up to 200psi, have been made by Emerson Walker Ltd., the Gateshead plastics blow moulding machine tool company.

Last week the company described a series of characterization tests using a variety of thermoplastics with a sample blow moulded 7-gall. container as test-piece.

The test-piece was blown by the firm's test and development department in low density polythene, high density polythene and polypropylene.

The polypropylene moulding is believed to be the largest blown container in this material which has yet been made in the UK and possibly in the world.

The usual weight of these containers was 3lb. and this gave a normal wall thickness of about $\frac{1}{8}$in.-$\frac{3}{16}$in. The test-piece had a variety of curves which were designed to show up abnormal 'thinning'.

The high density polythene containers weighed from approximately 2½-5½lb. on a number of different runs, these weight changes being obtained by altering the die on the extruder; normal wall thicknesses have been less than $\frac{1}{16}$in. to approximately $\frac{1}{4}$in. for the different weights of containers.

Bursting Test

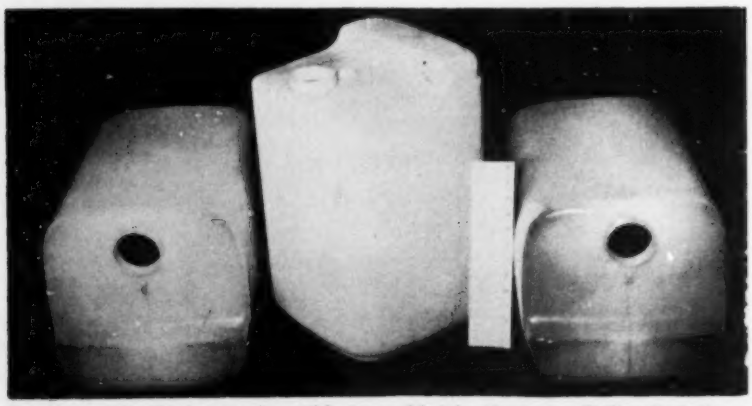
Using low density polythene the test-piece has varied in weight from less than 10oz. to about 3½lb. and the normal wall thickness has varied from 0.017in. to about $\frac{3}{16}$in.; obviously the thin-walled specimens were blown for use as liners. The liners were found to be thick on top and on the bottom, providing strength where it was needed most.

The company states that amongst the many evaluations which these samples underwent was a hydrostatic bursting experiment; this test was used to determine whether the sample had been blown correctly, whether the correct temperatures had been used and adequate mould locking force was available to provide good welds at the top and bottom of the test-piece.

Standard high density polythene test-pieces weighing approximately 5½lb. had a bursting pressure between 160psi and 200psi and in every case the first leak or tear has occurred *elsewhere* than near or on the weld line.

The test-pieces were made in natural colours to facilitate inspection for flaws, lesions and other irregularities in the finished blow moulding. This visual inspection was found particularly useful with polypropylene test-pieces because any mishandling of the natural polypropylene — by too high an extrusion temperature, sudden chilling, etc. — showed up as a variation in the opacity or translucency of the finished polypropylene 7-gall. test-piece.

The company points out that this is particularly important because long-term results are affected by bad processing conditions.



Three sample 7gal. containers blow moulded by Emerson Walker Ltd. for a series of characterization tests using different thermoplastics. Test containers here are in low-density polythene, high-density polythene and polypropylene (*left to right*). **The containers weigh approximately 3lb. with a wall thickness from $\frac{1}{8}$in. to $\frac{3}{16}$in. and have a variety of curves designed to show up abnormal 'thinning**

The test and development department of Emerson Walker is doing additional work on thin walled containers and liners; and it is expected that normal wall thicknesses for liners will reach .010in. using low density polythene, conversely using high density polythene or polypropylene very thick walled test items will be made with a view to the manufacture of pressure vessels and pump casings withstanding initially up to 500psi. Current development tests are being undertaken with abs polymers and excellent impact and pressure values are expected.

This test and development activity is already said to be providing basic data for a large number of firms in this country and abroad who are in consultation with Emerson Walker Ltd. about the applications of its big blow moulding machine tools in the manufacture of thermoplastic goods.

Glass Fibre Tested

THE strength of glass fibre manufactured by Deeglas Fibres Ltd., a subsidiary of BTR Industries Ltd., was unexpectedly tested and proved when the 1½ ton base of a 50ft. glass fibre church spire — the tallest in the world — fell from a lorry at Smethwick, near Birmingham, recently, narrowly missing several people. Damage, caused not by the impact of the fall but by the metal corner of the lorry, was a gash about 11in. long and 2in. wide.

This incident happened outside St. Paul's Church, where the octagonal church spire was being installed. The base was being lifted from the lorry by a 120ft. jib. Suddenly the base lost its balance and crashed 6ft. to the ground, hitting a brick wall in its path. Manufacturers of the church spire, Brylan Plastics Ltd., repaired the gash after installation — successfully done at night with the aid of searchlights.

(*See picture on page* 937)

DCL Move

The engineering division headquarters of the Distillers Co. Ltd., until recently at Devonshire House, Piccadilly, has been transferred to a new building, Enford House, N.W.1. The partitioning of the rooms is faced with pvc made by British Geon Ltd., a company in the Distillers Plastics Group.

Q A CABOT

SRF Black from oil?

FACTS

REGAL SRF is produced by the new REGAL process — patents applied for — permitting the control of structure at various particle size levels, from oil. Its Particle Size and Surface Area are close to those of PELLETEX and STERLING S, Cabot's long established American gas-SRF blacks. REGAL SRF provides physical properties and processing characteristics typical of gas-SRF types —

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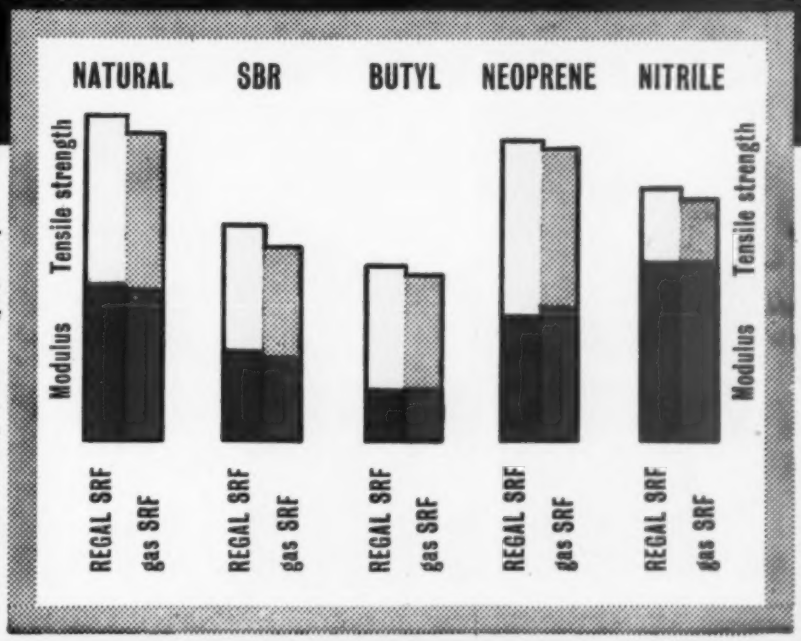

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NCRT May Become NCPT?

FIFTIETH ANNIVERSARY OF FIRST CLASSES IN RUBBER

'THE Institution of the Rubber Industry and the Plastics Institute have decided upon a joint teaching and examination scheme for those studying the technologies of rubber and plastics. Is it not time we called the College what it really is — The National College of Polymer Technology?'

This was stated by Dr F. H. Cotton, head of the National College of Rubber Technology, at the eighth convocation on November 30.

Earlier, Herbert Rogers, chairman of the NCRT board of governors, had opened the convocation by welcoming Sir Walter Worboys, chairman of BTR Industries Ltd., who presented the diplomas and prizes.

The convocation coincided, Mr Rogers said, with the jubilee of the first classes in rubber, at the Northern Polytechnic in 1911: this pioneering effort had been largely due to Dr T. J. Drakeley.

Approval has been received from the Ministry of Education, declared Mr Rogers, for the large scale extensions to be lined up with the present building. The foundation was to be laid in 1962.

Dr Cotton, in his report on the college, also referred to the new extensions, saying that the NCRT was 'living through exciting times'.

A year ago, A. A. Part, deputy secretary to the Ministry of Education, had announced that the college was to be extended. Now the architects, Scott and Barlow, had prepared plans based on the schedule of accommodation dictated by experience.

Dr Cotton said that the last session was a record: 157 full-time, 220 part-time and 448 short-course students had worked in the college for 183,000 hours. After paying tribute to the Board of Governors he said that the college had grown in size and complexity to a stage where he had to delegate responsibility to the staff. He described the two college committees over which he presided: the Board of Studies convened by Dr J. Glazer and the Staff Committee.

Sub-committees under the former were the 'Syllabus Examination and Short Courses Committee' under deputy head B. L. Davies and the research committee under G. N. Welding, the Reader in Polymer Science. Mr Welding was going to be busy, Dr Cotton declared: 60 research men were expected to be appointed when the college was enlarged.

It was at this point — referring to the tasks of the syllabus committee — that Dr Cotton asked why the college should not be called the National College of Polymer Technology.

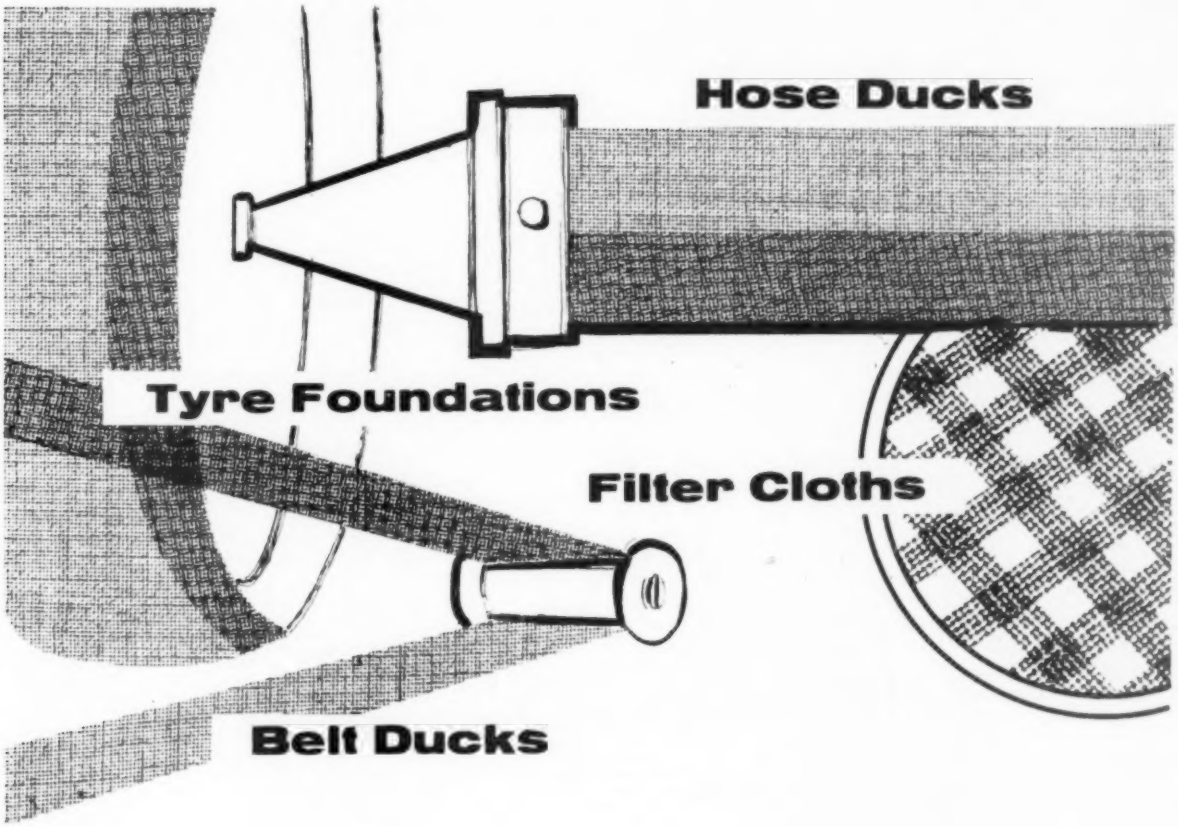
Reporting to the staff committee, went on Dr Cotton, were the liaison committee under Mr Robinson — which arranged contracts with sandwich students in industry, works visits and overseas educational tours — and the equipment committee convened by Mr Brydson.

After presenting the prizes and diplomas Sir Walter Worboys said that the word 'extensions' was rather an understatement — since the college would grow from an area of 20,000 sq. ft. to 80,000 sq. ft.

He had only entered the rubber

Continued on page 942

At the NCRT convocation *(left to right)*: **1. Sir Walter Worboys (Chairman, BTR), F. Train (John Bright) and Dr F. H. Cotton (head, NCRT). 2. Herbert Rogers (chairman, board of governors, NCRT) and Dr Scott (BTR). 3. Dr T. P. Hughes (B.B. Chemical) and D. E. Cameron (vice-president, FBRAM). 4. W. C. Wake (RAPRA) and A. Kennaway (BTR). 5. F. M. Panzetta and T. J. Joy (Avon). 6. J. Westhead (BTR) and W. E. Stafford (Rubber Regenerating). 7. H. F. Wilson (Telcon) and M. Kaufmann (NCRT). 8. F. Train (John Bright) and Miss Franklin (Anchor Chemical)**



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Rubber in 1962

SYNTHETIC CONSUMPTION FORECAST TO OVERTAKE NR

SYNTHETIC consumption will overtake that of natural rubber in 1962. This forecast was made by the management committee of the International Rubber Study Group in latest figures on rubber's statistical position.

The Management Committee provisionally estimates world consumption of natural during 1962 at 2.04m. long tons and consumption of synthetic at 2.075m.

Production of natural rubber in 1962 is provisionally estimated at 2,062,500 long tons and production of synthetic in member countries at 2.135m. tons.

The Study Group says that while there will be further sales from Government stockpiles during 1962, it is not possible at this stage to estimate their size.

The Group puts world consumption of natural rubber in 1961 at 2.050m. long tons and synthetic consumption at 1.870m. tons, apart from synthetic produced in non-member countries.

The Group's previous estimates, made in May this year, put natural consumption at 2.037m. long tons and synthetic at 1.865m. tons.

World production of natural in 1961 is estimated at 2.018m. long tons and synthetic output in member countries at 1.940m. against 2.035m. and 1.897m. long tons respectively in the May forecast.

Deliveries from Government stockpiles during 1961 are estimated at about 32,000 long tons against the May estimate of 30,000 tons.

The estimates made by the Committee are given in the following tables.

ESTIMATED NR SUPPLY IN 1961
(*in* 1,000 *long tons*)

(*a*) *Production*	
Territory:	
Federation of Malaya and Singapore	730
Indonesia	620
Thailand	180
Ceylon	98
Vietnam	78
Nigeria	57
Sarawak	45
Liberia	43
Cambodia	38
India	25
Other British Borneo	25
Burma	12
Territory of Papua and New Guinea	5
Other Countries	62
	2,018
(*b*) *Deliveries from strategic stockpiles*	
Estimates total deliveries	32
TOTAL NEW SUPPLY	2,050

ESTIMATED SYNTHETIC RUBBER PRODUCTION IN MEMBER COUNTRIES IN 1961
(*in* 1,000 *long tons*)

US	1,365
Canada	162
UK	100
Italy	87
West Germany	85
Other member countries	141
	1,940

ESTIMATED NATURAL AND SYNTHETIC RUBBER CONSUMPTION IN 1961
(*in* 1,000 *long tons*)

Territory	Natural	Synthetic	Total
USA	424	1,076	1,500
UK	168	115	283
Japan	165	90	255
West Germany	135	115	250
France	130	90	220
Italy	77	58	135
Canada	30	57	87
Czechoslovakia	53	7*	60
India	50	10	60
Australia	35	21	56
Netherlands	20	14	34
Belgium†	15	12	27
Austria	11	11	22
Indonesia	18	—	18
Denmark	6	3	9
Hungary	8	0*	8
Federation of Malaya and Singapore	8	—	8
Other member countries‡	6	—	6
Other countries	691	191	882
	2,050	1,870	3,920

*Consumption data for synthetic rubber exclude synthetic rubber produced in non-member countries.
†Including an allowance for Luxembourg.
‡Comprising Burma, Cambodia, Ceylon, Liberia, Nigeria, Thailand, and Vietnam.
Note: The oil-content of oil-extended rubbers is included in the figures.

NCRT MAY BECOME NCPT?

Continued from page 940

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The major part of Sir Walter's speech was a trenchant analysis of the business conditions in which students leaving the college would find themselves. He stated that there were four requirements for a healthy industry: good research; good application of that research — *i.e.*, good technology; good commercial exploitation; and good personnel work.

In developing this theme, an important point that he stressed to the students was that selling often tended to be underrated by the technical man. But some of them would become technical salesmen. They might be fearful of the change — but it was not difficult to make, and the work could certainly be very satisfying.

Dr Cotton, on behalf of the staff of the NCRT, presented a special book to Dr T. J. Drakeley, who retired as Principal of Northern Polytechnic and director of the NCRT in April 1961, and who has been intimately concerned with the history of the college and with education in the rubber industry.

'Dr Drakeley joined the staff of the Northern Polytechnic at the end of 1918, and immediately saw the potentialities of the mill, old vulcanizing pan, Schopper testing machine and other bits of rubber plant in the Chemistry Department', said Dr Cotton. 'He started a Rubber Trade School; and I well remember him coming about 1923 — full of enthusiasm — to the small rubber firm in Tottenham, where I was the Works Chemist. I became a lecturer in rubber technology at the Northern Polytechnic in 1928; and from then until 1961 I have had the privilege of working with and under Dr Drakeley'.

The convocation was followed by a conversazione, during which the college was thrown open for visitors. Special exhibits and demonstrations showed the wide field covered by the NCRT — ranging from experimental machinery and testing equipment to research on subjects such as the ultrasonic degradation of polymers and the ionic polymerization of isoprene.

Monsanto

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The major part of Sir Walter's speech was a trenchant analysis of the business conditions in which students leaving the college would find themselves. He stated that there were four requirements for a healthy industry: good research; good application of that research — *i.e.*, good technology; good commercial exploitation; and good personnel work.

In developing this theme, an important point that he stressed to the students was that selling often tended to be underrated by the technical man. But some of them would become technical salesmen. They might be fearful of the change — but it was not difficult to make, and the work could certainly be very satisfying.

Dr Cotton, on behalf of the staff of the NCRT, presented a special book to Dr T. J. Drakeley, who retired as Principal of Northern Polytechnic and director of the NCRT in April 1961, and who has been intimately concerned with the history of the college and with education in the rubber industry.

'Dr Drakeley joined the staff of the Northern Polytechnic at the end of 1918, and immediately saw the potentialities of the mill, old vulcanizing pan, Schopper testing machine and other bits of rubber plant in the Chemistry Department', said Dr Cotton. 'He started a Rubber Trade School; and I well remember him coming about 1923 — full of enthusiasm — to the small rubber firm in Tottenham, where I was the Works Chemist. I became a lecturer in rubber technology at the Northern Polytechnic in 1928; and from then until 1961 I have had the privilege of working with and under Dr Drakeley'.

The convocation was followed by a conversazione, during which the college was thrown open for visitors. Special exhibits and demonstrations showed the wide field covered by the NCRT — ranging from experimental machinery and testing equipment to research on subjects such as the ultrasonic degradation of polymers and the ionic polymerization of isoprene.

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VIEWS and REVIEWS

Technological Change

LAST week I was concerned almost exclusively with education in our industry — and now some more thoughts on the same theme.

As Professor J. W. Tibble says in 'Education and Technological Change' (*Advancement of Science*, Vol. XVIII, No. 71, May 1961) 'we have to incorporate (in our educational system) the capacity to go on acquiring new skills and attitudes throughout life, including some which cannot be precisely forecast'.

He goes on to make one of his chief points: 'Nor is it a question of simply adding on something to the old. For the new often involves a modification of existing traditions, techniques and customs. We have therefore to include in our function as educators the revaluation of tradition in each generation. . . . This means that in general the inculcation of specific skills and knowledge becomes less important than formerly and the development of flexibility and the understanding of principles and processes becomes more important'.

This means a basic revolution in approach. Education must not only change with the changing times but teach the need to change and the ability to do it. It must realize that it is now functioning in a dynamic, not a static, society.

Technological change, for instance, has brought an urgent need for better communications between 'the minority whose work initiates technological changes, the specialists in research and discovery on the one hand and on the other the great majority who may benefit or suffer from the products of change'.

Education Is Not Training

It has also raised the danger of substituting training for educating, *i.e.* pursuing specialist studies without relating them to a liberal, human background. A special problem arising here is that scientists and technologists have not yet produced any distinctive, fundamental, ethical values. 'This is not to deny that science has its own ethical standards, but it is certainly not clear how these standards might apply in the field of political and social life where the products of science are utilized'.

The 'moral insights and values which derive from earlier pre-scientific traditions . . . may not make sense to young people growing up in the world of today'. This puts a heavy responsibility on the educator; he has to forge or find the new standards for himself.

Society Shaken

There was a time when society was violently assaulted and overthrown from without, barbarians stormed the walls. Now, it is being shaken from within.

The sigmoid curve of technological growth during the last two thousand years has in our lifetime turned and is racing upwards. It is demanding correlated changes in thinking, in attitudes, in standards, perhaps in mind itself, and if they are not created and accepted, society will perish, by its own hand.

Look at some of the already-obvious social phenomena.

Increasing Fluidity

There is, for instance, what Prof. Tibble calls rather confusingly 'social mobility'. This can mean that technological change, by superseding old products with new, by the increasing use of mechanization, electrification, and automation, will continually render whole processes and factories, if not industries, obsolete, and communities of workers unemployed.

'Social mobility' occurs when workers must be prepared to move their homes to entirely new areas where the work is available — a most intractable psychological and economic obstacle during the depressions of the thirties but one which nowadays does not present quite as much difficulty. Though by no means overcome, this social immobility has been somewhat ameliorated.

But Prof. Tibble means something different. 'The child's future position, status and rewards are much less influenced than formerly by his place of birth and his parents' position in the society. It is indeed generally accepted among us that it is best for the society as well as for the individual if each child can be helped to take a place in society in which he can utilize his special capacities and skills'.

I understand this to mean that under the modern educational sorting-out system there is a greater class fluidity than formerly.

Families and Herds

Another social result of technological change discussed by Prof. Tibble is that families have become smaller and now pursue somewhat different ends. 'The modern home', he writes, 'is more in the nature of a service station and much less the production centre that it once was'. The basic unit of society, he thinks, is now the individual, not the family, clan, or tribe.

From which considerations it would seem to follow that the school and university must supply some social relationships which used to be provided in the family. Though their nature does change and 'become progressively less like extended families and more like the factories of our society where goods are processed and classified and streamed with a view to effective large-scale production'.

Prof. Tibble refers more than once to the elaborate use of technical resources in the fields of advertising, propaganda, and entertainment. They could be better employed in education, which, though considerably improved since the war, has been a hectic series of crash programmes, and he makes a final plea for adequate research to enable future social changes to be anticipated.

Psychology of Synthetic Sound

It will not have escaped notice that even musical composition is dependent on technical development and innovation. Beethoven could not have composed a piano concerto until the pianoforte had been developed.

A modern composer, Milton Babbitt, has written a

COMMENT ON SCIENTIFIC AND INDUSTRIAL MATTERS

by **F. C. JENNINGS**

'Composition for Synthesizer' which recently had a more-or-less public performance.

A 'synthesizer', in Mr Babbitt's mind, is a studio consisting of electronic panels and gadgets, whose buttons are pressed and knobs are 'twiddled' to produce music.

Creep Into Our Ears

The composition 'contained sounds redolent of organs — hand, foot, mouth, and cinema — later on came the expected pops and explosions, the bag of nails was shaken, the cash-register pinged, and the pressure-cooker hissed'.

I don't want to be too ponderous over a *jeu d'esprit* like this but I know I am not alone in believing that this sort of thing is a disservice to both science and music. It gives a false account of both of them.

I know that Beethoven used a 'cuckoo' and a 'quail' in a pastoral piece, and that Haydn wrote a 'Clock' and a 'Toy' Symphony, both of some beauty, but neither a Geiger Counter nor a Bag-O-Matic vulcanizer seems to me likely to lead to a musical product of any real aesthetic significance.

That is not to say that technical phenomena cannot be rendered into sound. When they are, the result is not usually music.

A lively-minded latex technologist is reputed to have developed a device to let us hear the swoosh of Brownian movement and the deafening crash of coagulation. But, although this might be accurately described as a 'composition for synthesizer', it would not merit public performance as music.

Teaching Mathematics and Language

Discussing mathematical teaching some time ago, I wrote about the importance of learning the value of approximation. Dr R. H. Muller sent to me a very pleasing and apposite quotation from the title page of his university log tables. 'Nothing betrays a deficient education in mathematics more than an excessive accuracy in numerical calculations'.

Words

Mr Maurice Kaufman has gone to a lot of trouble to give me his views on how to teach technology students to express themselves well in their own language.

He writes: 'I would like to question your approach. You may be right in your assumption that in many cases students are not given instruction in writing, but this does not follow from the fact that there is nothing in their time-table marked "English".

'I am not sure that such a lecture is the way to deal with the inability of the student to express himself. The roots of the problem lie much deeper than the level of learning a few tricks of writing'.

'Science and technology students must never be allowed to drop the study and use of their language. . . . But this does not necessarily mean a continued study of the mechanics of language. It is for this reason that I am more concerned to see that an understanding of the need for at least adequate expression permeates the whole range of technological studies. I require, for example, that my students should write essays on technical subjects, but I tell them that their English is just as valid a matter for criticism as are the technical points under discussion'.

Just a Tool?

There is here a broad agreement. Language, in this context, is only more than any other tool used by the technologist because it is used more often. It must be kept clean, sharp, and well-oiled, and practice with it yields the best results. A few people cut themselves with it, most people use it well enough, some are very skilful; formal teaching effects these classes but little.

What the technical student needs is not a series of lectures on the composition of the metal of the tool, the story of the evolution of its design, interesting as these are to some folk and perhaps part of the 'background' of technical education.

He needs, first, some direct instruction on what the tool will and will not do, then some demonstration of its special possibilities and dangers when used for technological purposes, and finally a lot of practice, in conditions, as Mr Kaufman insists, of evaluation of the results.

The technologist's stock-in-trade is ideas, but it is of the essence of his work that he must communicate these ideas to others. For this communication, he employs several media, chemical and mathematical formulae and equations, numbers, graphs, charts, diagrams, pictures, and, most frequently, language. He is only half a technologist if he cannot communicate effectively.

Design Data

In *Engineering Materials and Design*, Vol. 4, No. 12, pp. 816-821, appears a paper entitled 'Thermoplastics in Design', written by P. I. Vincent of the research department of I.C.I. Plastics Division.

'Producers of plastics are frequently asked by engineers for data to assist them in design. The request is usually for the type of constant that has been found useful with metals, since most engineering experience has been gained in that field'.

Although the author suggests that it is possible up to a point to use design methods applicable to metals when designing with thermoplastics, it is desirable, he says, to have some familiarity with the special properties of the material to be used. This may at first sight seem somewhat platitudinous but I can recommend intending designers to read his paper in its entirety as he explains very lucidly just how far standard methods of design can be used and indicates some of the additional aspects which have to be considered.

For instance, calculation of Young's modulus and Poisson's ratio assumes compliance with Hooke's law but polythene, for example, does not obey Hooke's law even at very low strains. It is therefore necessary to establish the relationship between stress and strain from first principles in order to derive a true picture of the behaviour of polythene under strain. The paper deals in turn with the various material properties which might be needed and more application of the principles propounded would without doubt result in fewer badly-designed plastics components being made.

CHARLES JENNINGS

MEN and MATTERS

A Review of People and Events

by Peter Richards

THE biggest shoemaker in the world opened a £60,000 crepe rubber factory in Western Nigeria last week. John Tusa, British Bata Shoe Co.'s managing director, said that the establishment of this new factory was only the beginning of the programme which his company had in view for the country as a whole. Bata not only operate a chain of retail shops in Nigeria but also manufacture shoes, process rubber and collect hides and skins in the country.

At practically the same time as Mr Tusa was making these remarks, a very different speech was being made by Chief Obafemi Awolowo, opposition leader of the Nigerian Federal Parliament. He proposed the nationalization of basic industries and commercial undertakings in an effort to safeguard the country's economy. He pointed out that the economic life of the country, with the exception of some minor trades, was being monopolized by foreigners.

But Mr Tusa can carry on undaunted with his plans for Western Nigeria. The Nigerian Federal Parliament rejected the Chief's motion for nationalization and approved the Government's policy of leaving things as they are. A passed amendment affirmed that nationalization of anything more than the utilities already nationalized was 'not in the best overall interests of Nigeria'.

The Western Nigerian Government is satisfied that there is a future for natural rubber: a policy of promotion of planting of rubber and of encouraging improved methods of management and processing has been adopted and a production target of 2½m. clonal seedlings a year has been set. The Government is establishing a new £190,000 regional rubber research station designed so that it may be expanded later to serve as a Federal or inter-territorial institute.

Helping the Handicapped

Lord Strathcarron, who is associated with I to I Plastics Ltd., Romford, and Lady Strathcarron, were guests of honour at the first dinner and ball of the Handicapped Children's Aid Committee, held recently at the Trocadero. Four charities in which handicapped children are concerned will benefit as a result of this function which raised about £4,000. They are: The Cerebral Palsy Centre, St. John's Wood; the Maud Natham Home, Sydenham; The Deaf and Dumb Home for Children, Clapham; and the Arthur Dickson Wright Leukaemia Research Fund.

New Folding Partition

The other day I had rather a frustrating experience at home when I attempted to open the door to a seldom-used closet. But no matter how hard I kicked it, I could not get it to budge. It was on this occasion that a new type of folding partition now on the market came to mind.

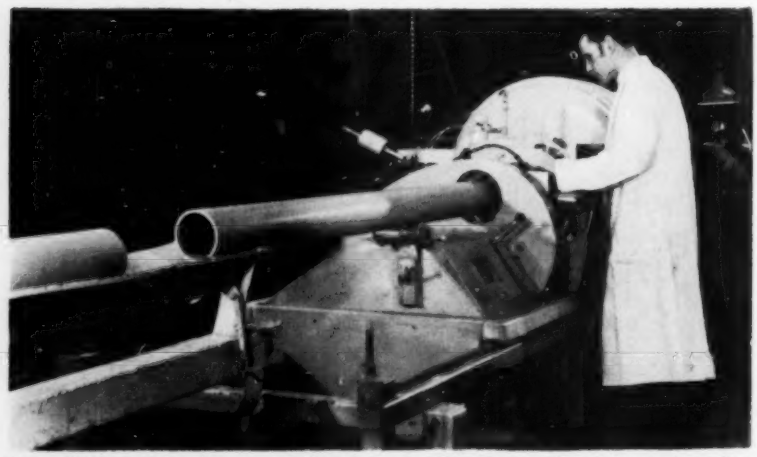
Called Marleyfold and designed primarily for commercial and industrial use it comes in two versions,

Marleyfold partitioning, dividing two dining-rooms in the Felbridge Hotel. It comes in two versions, Standard and Acoustic, and combines economy and good looks with simplicity of operation

Standard and Acoustic, and combines economy and good looks with simplicity of operation. Produced in sizes up to 50ft. long and 20ft. high, the Marleyfold provides wall partitioning and doors for virtually any situation. Every unit is made to measure and can be supplied on a supply-and-fix or supply only basis, individual quotations for each specification being given.

Basically the partition is made up of a metal framework consisting of pantographic type hinges and steel rods in rust-resisting metal. On either side of this frame is a layer of leather-grained pvc cloth. All the working parts are attached by stud and speednuts to tape which in turn is stitched to the pvc leathercloth.

The acoustic models effect considerable sound reduction between the areas they divide and are ideal for use in classrooms, conference rooms, factories, etc. Incorporating a layer of glass fibre quilt next to the leathercloth, faced with clear pvc film on one side and an aluminium pvc film on the other, they give a decibel reduction of up to 33 decibels. The partitions run in a U-shaped overhead track of enamelled steel, which may be concealed within the ceiling, on



One of the most rapidly expanding firms in the plastics pipe field is Durapipe and Fittings Ltd. This week the firm gave news of a £50,000 extension to its West Drayton factory (*see page* 936). **Durapipe has done much work on abs, and my picture shows a 3in. diameter pipe in I.C.I.'s Kralastic abs being extruded**

Down Comes Chlorobutyl...

You can now get a lot more Chlorobutyl for your money. In full commercial production, it costs only 2/6 a lb ex store, duty paid. Chlorobutyl – now known as Chlorobutyl HT10-66 – offers several advantages: compatability with other elastomers; increased cure rate; and wider choice of cure systems. Chlorobutyl HT10-66 has already been used with considerable success in America for tubeless tyre inner liners and non-toxic compounds for food containers, high-temperature steam hose, conveyor belting, and various moulded and extruded items. Samples and details of compounding and applications are available from:

Chemicals Division, Esso Petroleum Company, Ltd, 50 Stratton St, London W1. Phone: HYDE Park 7030.

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self-lubricating nylon bearings. The cross-over switch allows one door to pass over the track of another door installed at a right angle, and a meeting post permits a large room to be sub-divided into a number of smaller rooms.

My wife was pleased to hear there is a choice of 30 colours and patterns and all partitions are fitted with chrome handles and latches which can be obtained with a variety of locking systems, and I was pleased to hear that the only maintenance required is an occasional wipe of the vinyl surfaces. I think I will rip out all my stubborn closet doors and replace them with Marleyfold.

Star of Africa

In a ceremony in the Blair House, Washington D.C., where he was a guest of President Kennedy, William V. S. Tubman, president of Liberia, presented J. W. Keener, president of the B. F. Goodrich Co. with a decoration of the Order of the Star of Africa, with the rank of Grand Band.

In making the presentation President Tubman said: 'This honour is conferred in recognition of your substantial contributions, and those of your company, to industrial progress in the Free World, and particularly in Liberia'.

The B. F. Goodrich Co. was granted a concession on approximately 600,000 acres of land for rubber-growing in 1954 by the Liberian government and now has about 11,000 acres under cultivation. First rubber from the B. F. Goodrich plantation will be collected in 1962.

Hubron Aids Spastics

'Coronation Street' went to Failsworth recently when the highlight of a dance sponsored by Hubron Rubber Chemicals Ltd. in aid of the new Ambulance Fund of the Oldham and District Spastics Society was the arrival of Miss Doreen Keogh and Ivan Beavis, stars of the television show, who presented prizes.

W. Farmer, chairman of the Parents Committee of the Oldham and District Spastics Society, was at the function and was presented with a cheque for £163 9s. from J. H. Brown, managing director of Hubron Chemicals.

This dance, the second organized this year on behalf of the New Ambulance Fund, brings the total donated by Hubron Rubber Chemicals Ltd., to £318 9s.

Appointments in Brief

Stanley Works (GB) Ltd., the tool manufacturers, have appointed Ronald Shelton, product designer, to head a new department responsible for the design and development of new products. Robert Bradley, formerly chief planning engineer, has been appointed manager of the engineering department. Laurence Ford, chief engineer, is leaving the company to take up a new appointment.

* * *

C. G. Smith has been appointed to the new position of distribution manager for the Ekco group of companies, in which capacity he will control the storage and transport facilities of the finished products of E. K. Cole Ltd.

* * *

Dennis Stevenson and Gerard Kelly have been appointed joint managing directors of Genefoam Ltd., the Vitafoam subsidiary which supplies foam-filled cushions to the retail trade.

* * *

J. R. Taylor, BSc, FRIC, formerly technical manager of Goodlass, Wall and Co. Ltd., has been appointed technical service manager, surface coating resins, of British Resin Products Ltd.

* * *

Miss E. K. Speakman, who has served as secretary with Witco Chemical Co. Ltd. for 38 years, has retired. R. Griffiths has been appointed company secretary.

THE LEGAL ANGLE

A Sole Agency?

By a Barrister

A COMPANY which makes plastics kitchenware decided to sell its plant and move into larger premises. The managing director placed his old premises into the hands of three separate estate agents, on the same day, one of which duly sold the place and was paid the appropriate commission.

A few weeks later, the director was shattered to receive a letter from another of the estate agents, demanding details of the sale and commission. 'You made us sole agents', the letter read, 'and as such if you chose to sell the premises through someone else, we have suffered damage and are entitled to our money in any event'. They included a copy of the form filled in by the director — and down the bottom, in clear print, stood the usual sole agency clause.

'But I never read that'! snorted the director to his lawyer. 'I only signed on behalf of the company because I was told this was a confirmation of the details as to the premises, its rates, price demanded and so on. Do I have to pay again'?

Alas, here was another sad case of a signature at the foot of an unread document. On the whole, where you do sign an agreement the courts are loathe to listen to a claim that you did not know what you were signing. If you are illiterate, blind, of unsound mind or immature years, you may get away with it as the law does its best to protect the obviously feeble. On the other hand, if you are a businessman of sound intelligence, mature years and blessed with at least one good eye, you will be in great difficulty in trying to shake off the implications of your own signature.

There is, however, one possible way out and that is if you were induced to sign as a result of fraud, and fraud, in law, means not only a statement made knowing it to be untrue, but one made 'recklessly, careless whether it be true or false'.

In commercial cases, the second and less reprehensible form of fraud is far more common than you might imagine. Usually, it helps to free people from contracts entered into as a result of the puffing up of the virtues of products — but dealing with matters of fact rather than of opinion. But equally, where someone is induced to sign a document as a result of a false and fraudulent representation as to its contents, he may succeed in having that document declared a nullity.

What, then, of the director? When questioned by the lawyer it was discovered that he had been asked to sign 'our usual agency agreement'. He had been told that if he would be good enough to repeat the details which he had given over the phone, they would be written down and incorporated into that agreement and this he had done. He had, in fact, presumed that he was doing no more than confirming the details. There was no fraud, nor was there any hope of having the agency agreement set aside. The director had signed it, his company was bound by it, and they would have to pay.

The moral? Read before you sign, for all may not be what you presume.

Silver Jubilee at Suba-Seal

MILESTONE IN THE HISTORY OF WILLIAM FREEMAN AND CO. LTD.

WHAT do you sell, your company's name or the names of your products? A Yorkshire rubber company which celebrated its silver jubilee last week has always concentrated on popularizing the trade names of its products, rather than itself or its personnel. This policy of William Freeman and Co. Ltd. certainly seems to have worked because the names Suba-Seal and Suba-Maid are not only well known in the rubber industry itself but also in every chemist's shop.

The company began very modestly in Leeds where there was a laboratory and workshops for the design of closures. It was officially registered as the present company on December 2 1936 — since then its history has been one of continuous development.

Production began in the workshops attached to the laboratory, although work was only on a small scale. The intention was to develop a range of closures — but the war intervened. Work continued, however, on the design of devices for blood transfusion which obviously assumed major importance at that time.

After the war it was realized that the Leeds facilities were quite inadequate and a move was made to Barnsley in 1946. New laboratories equipped with the most modern instruments were created and compression, injection, pre-forming and extrusion plants were introduced to produce high grade mouldings and extruded sections.

The company advanced so rapidly that, during 1955, a large site at Staincross, near Barnsley, was bought and an entirely new factory designed and built. This was completed during 1960 and the final move took place in August of that year. There was no loss of production during the move, the workpeople going on holiday from the Peel Street factory and returning to work at Staincross.

To give an idea of the rate of expansion, the original range of closures was only about six but it now amounts to several hundred. The total product range, another good indication of the company's activities, is now well over 2,000 products.

The Original Seal

The product which started it all was the Suba-Seal Turnover Closure. This remarkable development provides a perfect seal which is even employed for holding a vacuum in evacuated bottles.

There are two main features. The first is the plug section which externally possesses a series of serrations, each one providing a grip on the inside of the bottle, creating a suction sealing point. The second is the skirt or 'turnover flange' which is turned over the neck of the bottle, thus giving a double seal.

Suba-Seal closures were originally used mainly on straight-necked, cork-mouth containers, but a wide variety of uses has since been developed. They have even been used as stoppers for salt and pepper pots.

Product Development

A company can develop production-wise in two ways. Either it can concentrate on one product and increase capacity of this over the years or it can increase it range greatly with, of course, an increase in production also. William Freeman adopted the latter course.

The company's Suba-Seal closures were originally produced mainly for heavy chemical work; for sealing carboys, Winchesters, bottles and the like. A parallel development was the use of the closures for vaccine packing and medical components.

The idea of the seal was applied to hot water bottles just before the war, but when that came all ideas of producing them had to be stopped.

After the move to Barnsley in 1946, work concentrated on the closures. At the same time, however, production of hot water bottles began using the same principle — and they have been popular ever since.

In 1948 the company introduced specially designed and shaped children's hot water bottles. The Suba-Bear was the first of a continuing range which has never lost its popularity.

Suba-Maid housewares were introduced in about 1950. At that time the products included mats and plugs, but has since developed into a wide range of products in both rubber and plastics materials. This now includes pedestal mats and rectangular floor mats with attractive designs, 'ripple-wave' triple mats, non-slip bath mats, kitchen sets comprising sink edge protectors, sink strainers, plate scrapers with flexible blades and double mats etc.

In 1957, main production on a range of Suba-Seal baby feeding products was began including teats, soothers, and feeding bottles of hd polythene. A fine illustration of a cleverly designed rubber and plastics product is the Stay-warm complete baby feeder. This comprises a hd polythene feeding bottle, a rubber teat and a clear polythene measure fitting over the neck — all fitting snugly into an expanded polystyrene container. The latter keeps the milk warm and if the liquid is introduced at maximum mixing temperature it will reach correct feeding temperature four hours later.

Bathing Caps

In 1950, the manufacture of bathing caps began. The current range includes ten designs ranging from a plain male skull cap to attractively decorated ladies' caps. In some designs the Suba-Seal serrations are incorporated on the inside.

The latest addition to basic types of production occurred in 1957, with

From Wm. Freeman's new Staincross factory—it was completed last year—come a range of well over 2,000 products

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● If you are troubled by corrosion, you will be interested in our wonderfully effective Patent "Permalock" Process for combating this at the most vulnerable place—in the vicinity of the joint.

● For anything to do with Vulcanisers, Heaters or Cures consult the people who are *really* interested (and have been for a long time).

THE LEEDS & BRADFORD BOILER Co. Ltd., STANNINGLEY, PUDSEY, YORKS.

THE VULCANISER PEOPLE

Telephone: PUDSEY 3134

the manufacture of Freeflex containers. These are blow moulded in both normal and high density polythene, the present range being 1oz. up to five gallons. (These products have been illustrated in *RPW* October 21, 649.)

The Trading Scheme

William Freeman and Co. decided at an early date that they would specialize in certain products and went ahead and did it. This policy has certainly paid dividends since they are now very well known in each of the fields concerned.

The products of the company may be divided into four main groups. The first are, of course, the Suba-Seal closures for industrial and medical products; the second Suba-Seal domestic products such as hot water bottles, bathing caps, teats, chemist's sundries etc.; the third Suba-Maid domestic products and the fourth Freeflex containers. Each one of these ranges has been developed extensively as exemplified by the range of hot water bottles. From the original bottle with its Suba-Seal closure, the range has been extended to include 17 different bottles with a number of interesting but differing features. Some, for example, are perfumed (there are four varieties of perfume), some are covered in attractive fabrics, some are small for children and there is also an extra large capacity giant size. Some of the latest are moulded from hd polythene, which is quite a new departure in the industry.

The company will adopt any process or material if it is required to add to or improve one of their existing ranges. For example, a certain amount of injection moulding is undertaken. Equally, as far as the use of new synthetic materials are concerned, these are employed wherever a particular application demands them.

Technical Features

The company has modern research facilities to ensure that product quality is maintained and that new developments are employed wherever necessary.

Where national standards exist, products are made with these as a basis. For example, blood transfusion equipment is made from natural rubber to BS2463 as well as the synthetic material described below. Hot water bottles conform to BS1970, which is, however, regarded as a minimum standard and the products also have the Good Housekeeping Seal. Suba-Seal closures have been approved by the Railways Clearing House and some customers have approval for the carriage of polythene bottles containing various liquids. It is, of course, necessary for customers to obtain this individual permission for carriage on the railways.

An interesting example of the application of new materials to existing products is the use of silicone rubbers for baby teats. Advantages are: it can be sterilized by boiling, it is lactic acid resistant and anti-colic, the hole does not swell once made and it retains its shape over a prolonged period. This type of teat is selling well in spite of the high price of 3s. 6d. each compared with only 7½d. for the company's latex teats.

Medical Closures

Suba-Seal closures are made in a variety of materials depending on the application. Vaccine closures, which are odourless and taintless, are made in sulphur-free rubbers. Other closures are made from the company's synthetic Subarite materials which very much extend the range. These particular materials have excellent ageing properties, may be sterilized in steam, contain no alkaline carbonates and can thus be used with insulin, procaine, etc., can be punctured with hypodermic needles and will re-seal on withdrawal of the needle and give minimum deposit in aqueous or oily solutions. This tendency of certain rubber compounds to deposit solid products when kept in water has been one problem which has engaged the company's attention. This new material is one effort to overcome the difficulty.

Another field in which the company has carried out much work is that of colour. Many products need to be sold in a wide variety of bright colours and in the early days these tended to fade or be removed by detergent. The change to pastel colours and the introduction of fluorescent light in so many shops added to the problem. The company has, therefore, in conjunction with pigment suppliers, carried out a great deal of research in overcoming the problem.

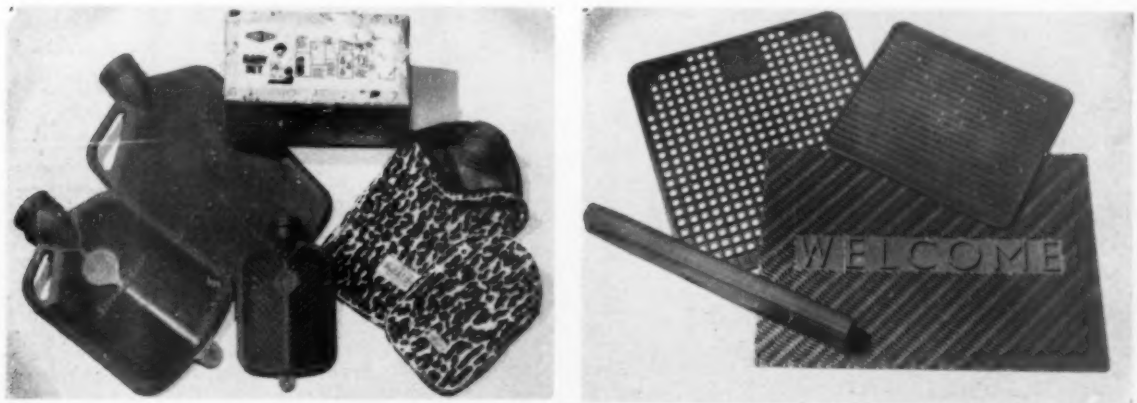
Specialization Policy

In spite of the many commercial troubles of the rubber industry at the present time — particularly with low prices — William Freeman and Co. Ltd. is progressing without apparent difficulty. This is undoubtedly due to its policy of maintaining high standards of quality and developing special product ranges.

Spectral Lamps

Philips Electrical Ltd. has introduced a new range of spectral lamps with transformers and Griffin and George Ltd. of Ealing Road, Wembley, appointed distributors, has developed a new stand and control gear to be used in conjunction with them.

The lamps are of the spectrum discharge type for experiments in the fields of interferometry, polarimetry, refractometry and spectroscopy. The transformers are auto-leak of the low-power factor type.



Production of hot water bottles incorporating the Suba-Seal closure began in 1946. On the right are products in the Suba-Maid Housewares range, introduced in 1950

PLASTICS MACHINERY DEVELOPMENTS

Bag-making and Wrapping Equipment

A COMPLETE RANGE BY BAKER PERKINS

By JOHN SHEARING

THE plastics film industry is now becoming aware that it must take as much interest in the machines which convert its materials as in the materials themselves.

Such equipment is a rapidly developing section of the plastics machinery making industry and Baker Perkins Ltd. (and associated companies) has been to the forefront in this development.

It produces a very wide range of plastics film conversion machines and the equipment may be divided into three main groups. The first type produces bags which are subsequently filled; the second wraps and seals solid articles in films, and the third simultaneously makes bags and fills them with a variety of solids and liquids.

Forgrove Flowpak Range

There are three types in this range of machines, namely the 84A, 84F and 84J. These produce a pillow-type package which is single web of wrapping material formed into a tube around a folding box. The longitudinal seam is heat sealed and the ends are crimped and heat sealed. In the case of the 84F, however, a fin-seal type of package is produced which is formed from two webs of wrapping material which are heat sealed on all four edges.

The 84A machine has continuous motion, a pillow-type pack and an output of approximately 200 per min. whilst the 84F has continuous motion, a fin-sealed pack and an output of approximately 100 per min. The 84J has intermittent motion, a pillow-type pack and an output of approximately 40 per min.

Both the 84A and 84F machines are suitable for use with a wide range of heat-sealing types of wrapping material, including cellulose film, lacquer-coated papers, polythene-coated papers, foil/cellulose film laminates and foil/polythene laminates.

Bag-making and Filling Machines

The Baker Perkins Ltd. TWS 750 machine is a complete packaging plant normally suitable for using polythene; however, heat-sealing cellulose film can also be handled by changing the chromium jaws to the conventional resistance heating type instead of the impulse type.

This machine is suitable for all free flowing products ranging from salt to frozen vegetables. The output is high at 70 packs per min. and the package size is variable up to a maximum of 15in. x 8½in.

A pillow-type pack is made by this machine from a single reel of wrapping material which is drawn over a forming tube, the overlapping longitudinal seam being heat sealed.

The bottom end of the tube of wrapping material is sealed by a pneumatically operated draw-bar mechanism which grips the plastics and descends, pulling more material over the forming tube which has been slightly unwound to obviate stretching. A cut-off mechanism in the heat-sealing dies separates each complete package at the completion of each cycle.

The result of these operations, amounting to six in all, is a pack with crimped and heat-sealed ends and a heat-sealed longitudinal seam running down the centre of one side.

The Rose Telesonic Packing Machine fills bags over a wide range using air to open the bags and guides to steer the products into them. It can handle both cellulose film and polythene. High output speeds can be achieved and a bag size change-over only takes a few seconds.

The Rose Vertical Sachet Machine

An important modern variation on bag filling and making machinery is the sachet-sealing machines which also fill the sachets with liquids. The VSM makes, fills and seals sachets of cellulose film and acetate film laminates to pliofilm or heat-sealed foil taken direct from the reel. It will handle such products as shampoo, mustard, concentrated juices and hair cream and can be arranged for either single or twin filling pumps. Up to 120 sachets per min. can be produced, depending on the shape, and type of liquid.

The maximum capacity of filling pumps is 100cc. or 50cc. if twin pumps are used. Width changes in sachets are easily made and length changes can be made while the machine is running. Photo-electric cell registration gear is a standard attachment and gives correct printing registration on both sides of the pack. Corrosion resistant steel is provided where necessary.

The Wrapping Machine

The Forgrove Standard BW-6 is a versatile machine which can wrap a wide variety of products in polythene and polypropylene.

The style of wrap is a heat-sealing type of progressively formed folds at the ends of the package, the last fold being turned up or under. When dealing with articles such as regular-shaped cartons or trays, the machine may be arranged for double point end folding. Both tight and loose wrap control is incorporated. The machine

Continued on page 959

The Forgrove Model BW-6 Wrapping Machine showing the in-feed conveyor belt and the take-off of wrapped articles

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If you are a chemist selecting an oil as an ingredient in a product, or as a processing aid, or as an inert carrier for other materials, you should consult Shell who have available a wide range of mineral hydrocarbon oils. Shell Process Oils, produced at the many refineries in the United Kingdom and overseas and backed by Shell Technical Service, offer a great variety of chemical and physical properties that will satisfy most requirements.

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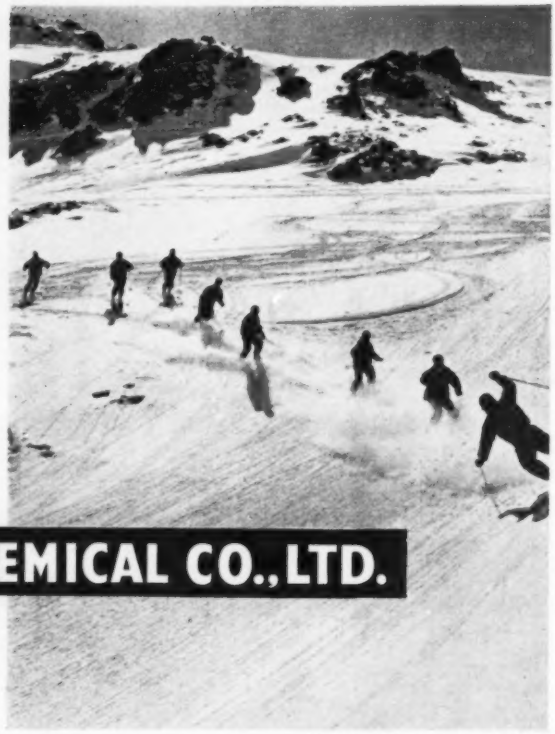

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LPD Expands at Bury

ACTIVITY IN CARPET BACKING FIELD

LATEX PROCESS AND DISPERSIONS CO. LTD. has announced plans to develop still further its facilities at Bury, Lancashire.

This year new compounding equipment was installed and recently a 27in. carpet backing and fabric coating machine, specially designed by LPD and built for it by British Tufting Machinery Ltd., was installed at Elton Fold Mills.

The company says that this equipment is not restricted to testing its own compounds, but is available to carpet and textile manufacturers who wish to have samples of their products coated with different types of compound. The coating of fabrics and the treatment of textiles with synthetic and acrylic latices is growing considerably and LPD is already in a position to advise on developments and supply commercial compounds.

The company has also installed a large automatic continuous foaming machine for firms who wish to carry out trials with foam on their own carpeting or fabric. This is used in conjunction with the backing fabric coating machine.

In the evolution of flexible foams as used in carpet backing, the company has produced a range of compounds to meet most needs, but products can be tailor-made for special requirements. Regular foam compounds are in production at Bury and it is predicted that this section of the firm's activities will, in the coming years, increase substantially.

Export Business

Export business has been developed over the years with the result that the company ships overseas to at least nine countries as widely separated as New Zealand and the markets of NW Europe and Scandinavia.

With progress in the application of latex moving quickly, LPD has felt it essential to be kept fully briefed on developments in the USA and on the Continent. Accordingly an agreement has been reached with companies active in the trade in North America and Western Europe. There is a close collaboration and a free exchange of information between participants.

Liaison with the General Latex and Chemical Corp. of Cambridge, Massachussets, is kept up, as a result of which the two companies have a complete and up-to-date exchange of information, formulations and technical and mechanical know-how. This is a two-way business which involves visits to each other's plants. The participants often visit users of their compounds to bring their technical experience to bear on any problems.

Rapid Growth

Following this arrangement, LPD concluded a similar agreement with eur-O-compound NV, Weesp, Netherlands. In this way news of activities on the Continent is supplied direct to LPD who are able to anticipate comparable developments in Britain.

Since its foundation in 1949 LPD has expanded quickly; today the production from the Bury factory is over 50 times that of the first year, and it now claims to be one of the most up-to-date companies processing latex in the UK.

New Electronic Grade Alkyds

Allied Chemical Int. has introduced two new alkyd moulding compounds, Plaskon Alkyds 541 and 428. These compounds are high-purity materials designed for use with electronic components.

Plaskon 541, based on a diallyl phthalate resin, is glass fibre reinforced and flame retardant. Plaskon 428 is a fast-curing, glass-filled granular material featuring stability of dielectric constant at varying temperatures.

Kleeware Shut-down

Two hundred men and women, employees of the Kleeware Plastics factory in Newton Aycliffe (Co. Durham) were given seven days' notice when the factory closed down.

The company said that the factory was too far away from the main production units in Gloucester and South Wales for it to be maintained under present competitive conditions.

Ceylonese Latex Crepe Switch

CEYLON rubber producers, except for the smallholders without mechanized manufacturing processes, have switched on to latex crepe from sheet rubber manufacture, writes our Ceylon correspondent.

The main reason for this is the prevailing prices for rubber; latex crepe fetch better prices, the drop of prices in Singapore more seriously affecting the sheet market rather than the crepe. The larger rubber estates are producing sheet at a cost round about 65 cents and 70 cents per lb., when the present market is down to 88 cents for the best sheet.

On the other hand, they could produce latex crepe at 80 cents to 85 cents per lb. with the average all-round price standing at Rs. 1.10.

Profits from latex crepe are much higher than from sheet, further the range of price between the various grades of latex crepe does not vary over 2 cents while the difference between RSS 1 and RSS 4 is 6¼ cents.

Effect on China Contract

Rubber trade circles in Ceylon feel this situation would affect the China contract to a certain degree — the 31,000 tons contracted for this year, of which 18,000 tons have still to be bought by the Commodity Purchase Department (on behalf of the Ceylon Government) would be greatly delayed. The Chinese Government has already made representations about this.

Another reason why producers are making latex crepe, it is reported, is because crepe could be freely consigned to any buyer, and not diverted only to the Commodity Purchase Department for supply to Government-to-Government contracts.

Proceedings Against Microcell Discontinued

AIRCRAFT Furnishings Ltd. has discontinued proceedings against Microcell Ltd., a subsidiary of BTR.

Proceedings were commenced in November 1959 for alleged infringement of British Letters Patent No. 811,898 relating to aircraft passenger-seat structures.

It was alleged that the tip-up seats of the type supplied by Microcell Ltd. to BOAC and installed in the Britannia 102 aircraft, constituted an infringement.

In its defence, Microcell denied infringement and counter-claimed for the revocation of the letters patent on the grounds that it was invalid for a number of reasons.

With the discontinuance of proceedings, Aircraft Furnishings has submitted to a judgement of the Court revoking the letters patent, and is reported to be liable for costs.

Plastics Sales Up

13% HIGHER FOR THIRD QUARTER 1961

NET sales of plastics materials of UK manufacture in the third quarter of 1961 at 145,600 tons were 16,800 tons or 13% higher than a year earlier, according to official figures from the Board of Trade. Net sales of thermoplastic materials were 19%, and thermosetting materials 4% higher than a year earlier. The improvement in sales in the second quarter of this year was therefore well maintained in the third quarter as a whole. The Board of Trade comments that limited information about the monthly level of sales suggests that although net sales recovered well in September from the seasonally low August level, they did not reach the high levels of June and July.

Manufacturers' stocks of plastics materials (both thermosetting and thermoplastic materials) rose only slightly during the quarter. At the end of the period they were 11% higher than a year earlier.

Production during the third quarter is estimated to have been about 2% higher than a year earlier; however, production of thermoplastic materials was only slightly higher, the bigger increase (nearly 5%) being for thermosetting materials.

Direct exports of plastics materials in the third quarter were below the levels of the second and first quarters of 1961, though they compared well with the average rate during 1960 and were well above the low level of the third quarter of last year. Imports in the third quarter of this year were little different from those of the second and first quarters, and remained well below the average rate during 1960.

Consumption of plastics materials in the UK is estimated to have been some 8% higher in the third quarter than a year earlier; this compares with an estimate of a 3% increase in the second quarter and a 10% fall in the first quarter, as compared with a year earlier.

The increase in net sales in the third quarter as compared with a year earlier was largely accounted for by polystyrene, polyolefines (polythene and polypropylene) and polyvinyl chloride. Net sales of polystyrene were nearly 2,500 tons, or 24% higher than a year earlier; about half this increase is estimated to have been accounted for by a replacement of imported by home produced material while increased exports and increased overall UK consumption were about as important as each other in accounting for the rest of the total increase.

Net sales of polyolefines were 9,300 tons, or almost 40% higher than a year earlier; an important factor in this seems to have been increased exports. Net sales of pvc (other than resins) at nearly 2,800 tons, were 12% higher than a year ago.

NET SALES OF PLASTICS MATERIALS (*a*)

	April-June 1960	July-Sept. 1960	April-June 1961	July-Sept. 1961
	(in thousand tons)			
Thermosetting materials:				
Alkyds	14.4	12.6	14.6	13.9
Aminoplastics	15.2	14.1	14.8	14.5
Phenolics and cresylics	19.3	18.2	19.1	17.6
Others (*b*)	5.8	5.3	6.4	6.0
Total thermosetting	54.7	50.1	55.0	52.0
Thermoplastic materials:				
Polyvinyl chloride (*c*)	26.4	22.7	28.6	25.5
Polystyrene	11.1	9.9	14.1	12.3
Polyolefines (*d*)	28.1	23.6	35.3	32.9
Others (*e*)	23.8	22.5	24.9	22.9
Total thermoplastic	89.5	78.7	103.0	93.5
Total, all plastics materials	144.2	128.8	157.9	145.6
Stocks at end of period:				
Thermosetting materials	19.7	20.3	20.7	21.7
Thermoplastic materials	56.9	72.0	79.9	80.7

Note: Any apparent discrepancies are due to rounding of figures.

(*a*) The figures of net sales were compiled from returns from nearly 170 firms known to have been manufacturing plastics materials, whether for sale or for use in the production of plastics goods or other goods (*e.g.* paint) containing plastics materials. Synthetic resins for use as textiles are excluded. The figures are free of duplication, *i.e.* of double counting of plastics materials at different stages of production.

(*b*) Including epoxide resins, casein plastics and unsaturated polyesters.

(*c*) Excluding sales of resins (*i.e.* polymers sold as such).

(*d*) Polythene and polypropylene.

(*e*) Including acrylics, cellulose plastics, polyvinyl acetate, polyamides, polytetrafluorethylene, polyvinyl chloride resins (*i.e.* polymers sold as such).

New US Aircraft Tyre

A NEW aircraft tyre capable of handling the tremendous heat, loads and speeds of the 2,000-mile-an-hour B-70 has been developed by The B. F. Goodrich Co. nearly a year ahead of schedule. The tyre described as 'a major advancement in the tyre making art', has passed B-70 tests, the company announced.

B. F. Goodrich engineers worked 18 months, trying scores of new materials and designs, before they hit on a combination that met the requirements laid down by the Air Force and North American Aviation Inc. Conventional aircraft tyres would be virtually destroyed by the heat inside the B-70 wheel wells while the aeroplane is in flight, a company official said. Heat is generated by air friction at supersonic speeds. Even with insulation, the tyres will be subjected to oven-hot temperatures while in flight, he explained. In addition to its heat resistance, the new tyre is stronger, smaller and lighter than conventional aircraft tyres of equivalent load capacity.

The major problem in the development of the tyre was to find a compound that would withstand the conditions imposed by the B-70's high speed, high load, high temperature operating conditions. 'To do this, our compounders investigated a multitude of compounds involving different rubbers. The compound used in the tyre is a new formulation'. New concepts in tyre carcass construction enabled the B. F. Goodrich designers to pack more strength and endurance into the tyre per pound of tyre weight.

'Nature's Plastics'

A young people's lecture, 'Nature's Plastics', is to be given by Professor M. Stacey, on January 5 1962 at 2.30 p.m. in the lecture theatre of the Institution of Electrical Engineers, Savoy Place, London, W.C.2. The lecture is primarily intended for school children, students, apprentices and works' personnel between the ages of 15 and 18.

Tickets can be obtained free of charge from The Plastics Institute, 6 Mandeville Place, London, W.1.

Walter Knight

We regret to announce the death of Walter Knight, who was for many years connected with the Avon India Rubber Co. Ltd., Dunlop Rubber Co. Ltd. and Brynmawr Rubber Co. Ltd.

Mr Knight, who had only recently returned from Africa, died in Southampton hospital.

Plantation Newsletter

MALAYANS URGE CO-OPERATION FROM USA

FROM KUALA LUMPUR

THE Malayan Government, supported to the hilt by the rubber industry, lost no time in hammering home their case for a 'square deal' when Mr Chester Bowles, the American Under-Secretary of State, came to Kuala Lumpur for a week to attend the 13th ministerial meeting of the Colombo Plan.

Within a few hours of his arrival, three members of the Cabinet held talks with Mr Bowles and stressed upon him how imperative it was to restrict the minimum releases of rubber from the American stockpile at this time. The meeting came in the wake of a plea by the Malayan Prime Minister, Tunku Abdul Rahman, for a stabilization of commodity prices.

Mr Bowles was obviously impressed with his talks with officials and with the robust state of affairs in this country. He gave a pledge that the USA would make every effort to help develop pricing and marketing plans which were fair to the people of Malaya.

He further gave an assurance that he would make a personal study of the problem of rubber prices in all their complex ramifications. Mr Bowles said he realized that the question of rubber prices was of deep concern not only for Malaya but also for other natural rubber producing countries.

Mr Bowles said the US Government was committed not only to a thoughtful study of the situation but also to the development of action programmes which, to the maximum degree possible, would enable it to cope with this effectively and justly to all concerned.

He added that the US knew by experience that answers would not be easy to come by. Particularly in the case of commodities which were sold largely on the international markets. These made the difficulties more complex.

'Of these, natural rubber, which has a direct synthetic competitor, perhaps represents the greatest problem of all', he added. 70% of the rubber consumed by America (1.558m. tons in 1960) was synthetic.

Mr Bowles said that a natural rubber price which was low enough to attract buyers in the world market would tend to discourage further expansion of synthetic rubber plants in the USA and other countries. 'But I also agree that at the same time, natural rubber producers must be assured of a sufficiently high price to enable their governments to finance their programmes for internal development and to provide fair profits and wages', he added.

He said it was the responsibility of the producing nations to do everything in their power to increase efficiency and thereby lower costs not only on the large estates but also smallholdings. This was essential if the natural rubber industry was to hold its own with synthetic over a period of time.

Meanwhile, the assurances given by Mr Bowles were warmly received here. The Government said it was satisfied with these pledges and 'hoped to hear from Washington soon'. The chairman of the Rubber Producers' Council, Mr

by our Malayan Correspondent

J. Brown, said he felt that Mr Bowles' visit had been most opportune and one would only hope the validity of the case put forward by the Federation Government would now be better recognized in America than appeared to have been the case before.

Outcry from Producers

Since America announced its decision to release 5,000 tons of rubber a month from its stockpile at any price below US 32 cents a lb., with no limit above that price, there has been a great outcry from rubber producers in this country. Britain, too, is to release 1,000 tons a month below 2s. 3d. a lb. with no limit above that price.

According to experts here it is already known that there will be a surplus of natural rubber of about 40,000 tons this year, and together with the 6,000 tons to be released monthly, gives a total surplus of about 110,000 tons a year.

During the past month, the market has declined by 10 cents (Malayan) a lb. On the basis of a monthly production of 60,000 tons, Malaya's income will be reduced by $13,440,000 a month, or about $160m. a year. The market would have declined much earlier had it not been for support from Russia which is reported to have bought 35,000 tons during October.

According to the president of the Penang Rubber Trade Association, Mr Heah Joo Seang, the American move to depress the price of rubber would have a tremendous psychological effect on Asians and might drive them into the arms of the Communists.

Payroll Recovery

An honest Indian estate labourer, who found a $30,000 (about £3,500) payroll reported missing after it had been air-dropped onto an estate in North Malaya, is to be rewarded by the management. Sinnathamby, 30, and several fellow workers who helped in the search, will share in a substantial cash award from the Sungei Ular Estate, a Socfin estate, near Kulim.

The bag containing pay for the 800 labourers on the estate had been dropped by an Auster plane but missed its target. As soon as the mistake was realized a grand search was organized by the estate staff and the police. Several hours later, the bag was found and handed over to the estate manager, F. J. Richmond. To avoid ambushes at one time it was customary for many rubber estates to receive their staff wages by air-drops, particularly during the height of the Emergency. However, these days the number of estates to be served by air-drops has decreased and only a few of the more isolated ones carry on this practice.

The normal procedure is for the bag containing the money to be dropped on to the front lawn of the manager's bungalow at a set hour.

Rubber Statistics

CANADA — SWITZERLAND

CONSUMPTION of rubber (natural, synthetic and reclaimed) in Canada showed good increase in September as market for new tyres and replacement improved.

Consumption of all rubbers in September increased 7.4% to 9,913 long tons compared to 9,227 in the like 1960 month. The first nine months consumption, however, showed a decrease of 1.8% to 79,449 long tons from 80,932 a year ago.

September consumption was: natural 2,835 long tons, against 2,949 year earlier; synthetic 5,719 against 4,991; and reclaimed 1,359 against 1,287. In period January/September, totals were: natural 22,787 long tons against 27,082 year ago; synthetic 44,739 against 41,600; and reclaimed 11,923 against 12,250.

Produced during September were 13,896 long tons of synthetic rubber, compared to 12,661 tons a year ago. For the first nine months production, synthetic rubber totalled 122,255 long tons, against 118,051 a year ago. Reclaimed rubber production in September this year amounted to 556 long tons, against 614 tons a year ago and in the nine months 4,311 long tons compared to 4,675 year before.

Switzerland

Swiss imports of rubber in October totalled 1,274,331 kilos compared with 735,230 kilos in September and 1,341,527 in October 1960.

Details were as follows (in kilos):

	Oct., 1961	Sept., 1961
Raw rubber	865,104	296,516
Synthetic rubber ..	326,077	392,145
Reclaimed rubber ..	37,185	996
Scrap rubber ..	45,965	45,5[illegible]3

Rubber and Plastics Stock Market

A REVIEW OF PRICES AND TRENDS

GETTING ready for its market debut is DUNBEE - COMBEX, a plastics and toy company whose chairman will be Lord Westwood. Started just after the war the firm now employs 800 and makes the claim that it is among the leading exporters of plastics material in the country. The two men who have built up the company are Basil Feldman, 37, and Richard Beecham, 36, who first met in a Youth Club. They borrowed £500 each from their parents in 1946 and set up in business with two employees.

Shares of the group will make their entry into the stock market by way of a placing. Let's hope that trading conditions are better than when dealings began in the shares of T. H. AND J. DANIELS, the engineering specialists. Some 10% of the £375,000 equity was made available at a price of around 7s. 7½d. and at the start of trading they went to a small premium.

Full of bounce. That's the summing-up for the half-time report from LONDON RUBBER. Group earnings for the first six months have exceeded the record of those in the similar period for 1960. Hopes are that in the absence of unforeseen circumstances profits for the current year will compare favourably with those of last time. E. M. Jackson, the chairman, says the progress of the group continues unimpaired and sales of the principal offshoot within the group were by both volume and sales in excess of those before, and reached new records — so did profits. Satisfaction was also expressed with the recently-acquired J. ALLEN RUBBER CO. Its sales 'are comfortably higher' than the first half of 1960 and profits are materializing at a much higher rate than the £100,000 per annum envisaged at the time of the purchase.

Another bit of cheer came from the chairman of MCKECHNIE BROTHERS, who told shareholders that despite the current uncertainties he felt optimistic about the future of the group and looked forward to the company's continued expansion. Trading profits for the first quarter were comparable with the same period last year but the short-term outlook in the home market was not too good because of the Government's restrictive policies. The board, it would appear, is not too worried about the Common Market problems for steps have been taken to improve efficiency and these should enable them to keep costs down and thus meet the new challenge.

DANNIMAC have returned sparkling profits up from £392,297 to £529,072, and after the tax bill the net figure has improved by £46,107 to £245,387. But for shareholders there is nothing new in the way of a rise in dividend which stays at 7½%, the same rate paid since the shares were offered to the public back in 1956.

Share Price Movements

Par Value	Company	1961 High	Low	Nov. 25	Latest
£1	A.E. Ind. Ord.	48/6	28/3	33/9	30/3
5/-	Albright & W. Ord.	29/6	20/3	23/6	23/–
£1	„ „ „ 5% Pref.	17/3	13/–	13/–	13/6
5/-	Anchor Chemical Ord.	25/6	15/3	16/–	15/9
4/-	Airfix	43/6	17/–	43/–	38/6
4/-	„ Non Voting	36/9	16/–	36/3	32/–
5/-	Andersons Rub. Ord.	—	—	3/9	3/9
£1	Angus Geo. Ord.	83/–	58/6	68/9	68/6
5/-	Ault & Wiborg Ord.	17/–	12/9	15/–	15/–
£1	Avon India Rubber Ord.	46/6	30/–	36/3	37/6
£1	„ „ „ 6% Pref.	19/3	14/9	15/–	15/–
10/-	Bakelite Ord.	66/3	42/3	43/1½	38/9
£1	„ 6% Pref.	19/3	16/3	16/9	16/9
£1	Baker Perkins Ord.	59/6	40/6	45/6	45/–
4/-	Bank Bdg. Rubber Ord.	3/6	1/9	2/–	2/–
4/-	Bettix	11/9	7/6	8/9	8/9
4/-	Brammer H. Ord.	17/–	13/9	13/9	13/9
10/-	Bridge, David Ord.	60/–	27/–	27/6	27/6
5/-	Bright, John Ord.	9/6	6/–	6/9	7/3
5/-	Brit. Blting. & Asb. Ord.	24/–	17/6	19/–	19/6
£1	„ „ „ „ Pref.	14/–	12/6	13/3	13/3
5/-	British Electronic Indus.	15/6	9/6	11/9	11/3
£1	BICC Ord.	62/6	49/–	59/–	56/9
5/-	BTR Ind. Ord.	18/9	8/9	9/3	9/6
£1	„ „ 7½% Pref.	21/6	19/6	20/–	20/–
10/-	Castrol Ord.	52/–	36/–	30/9	39/6
£1	Courtaulds Ord.	47/6	27/3	29/6	28/–
£1	„ 5% 1st Pref.	16/–	13/9	14/6	13/9
£1	„ 6% 2nd Pref.	18/3	15/9	16/9	16/6
4/-	Cow, P. B. Ord.	10/6	7/6	8/9	8/6
£1	„ „ 5% Pref.	14/3	12/6	12/6	12/6
5/-	Daniels (T. H. & J.) Ord.	—	—	—	8/–
1/-	Dannimac Mfg. Ord.	16/3	10/6	15/3	15/–
10/-	De La Rue Ord.	70/–	44/9	58/–	54/–
£1	„ „ „ 3½% Pref.	10/6	9/6	10/–	10/–
10/-	Distillers Co. Ord.	41/3	31/–	39/6	38/6
£1	„ „ 6% Pref.	20/3	17/–	18/–	18/–
£100	„ 5% Conv. Loan	£96	£90	£91½	£91½
£100	„ 5½% Unsec. Loan	£86½	£72	£77½	£76½
10/-	Dunlop Rubber Ord.	29/–	21/6	29/–	28/6
£1	„ „ 5½% Pref.	16/–	13/9	15/6	15/6
£100	„ 3½% 1st Debs.	£69	£67	£68	£68
£100	„ 4½% 2nd Debs.	£79	£74	£74	£74
£1	Eng. Elect. Ord.	40/6	25/3	31/6	25/3
4/-	Ebonite Cont. Ord.	8/6	4/9	5/–	5/–
£1	English China Clays Ord.	117/6	80/–	101/3	101/3
£1	Goodyear Tyre 4% Pref.	11/6	9/9	10/–	10/–
5/-	Greeff Chem. Ord.	37/7	21/6	22/–	22/–
10/-	Greeff Chem. 5½% Pref.	8/3	6/9	7/–	7/–

Par Value	Company	1961 High	Low	Nov. 25	Latest
4/-	Greengate & Irwell Ord.	6/9	3/3	3/6	3/6
5/-	Hackbridge Hldg.	6/9	4/6	4/9	4/6
£1	Harrisons & Crosfield Dd.	57/6	42/–	47/–	46/–
1/-	Hunt & Moscrop Ord.	2/3	1/3	1/9	2/–
£1	Imp. Chem. Ord.	81/6	56/3	63/3	58/3
£1	„ „ 5% Pref.	16/3	13/6	14/9	14/–
£100	„ 4½% Unsec. Loan	£83	£76½	£81½	£80
£100	„ 5½% Conv. Loan	£93	£86	£87½	£87½
5/-	Laporte Ind. Ord.	28/9	18/3	21/6	20/9
£1	„ „ 7½% Pref.	23/–	20/–	20/–	20/–
£1	Leyland & Birm. Rubber Ord.	59/3	37/6	40/–	42/6
£1	„ „ „ 6% Pref.	18/9	15/–	15/–	15/–
2/-	London Rubber	15/6	9/6	14/–	14/6
£1	„ 6% Red. Cum. Pref.	20/–	16/9	17/6	17/6
£1	McKechnie Bros. Ord.	43/–	27/–	37/–	37/–
£1	„ „ 'A' Ord.	45/–	32/–	32/–	32/–
£1	„ „ 6% Cum. Pref.	18/–	16/–	16/6	16/6
5/-	Monsanto Chem. Ord.	27/6	14/6	17/9	16/9
£1	„ „ 3½% Pref.	12/6	10/9	11/–	11/–
£100	„ „ 6% Debs.	£98	£88½	£91½	£91½
5/-	Miles (H.G.) Hldgs. Ord.	10/–	7/–	8/–	10/–
2/-	Movitex	7/6	4/6	4/9	4/9
4/-	North, J., & Sons 'A'	26/–	17/3	25/6	25/9
£1	North British Rubber	21/3	10/9	11/–	11/3
5/-	Northwestern Rubber	13/–	9/–	12/–	11/–
5/-	Plastic Enginrs. Ord.	40/–	28/3	28/3	30/–
10/-	Projectile & Eng. Ord.	50/6	22/6	26/6	24/–
5/-	Redfern Holdings Ord.	4/–	2/9	3/6	3/6
2/-	RFD Ltd. Ord.	6/3	3/6	4/9	5/–
£1	„ „ 5½% Pref.	15/–	10/6	11/3	11/3
2/-	Rubber Imp. Ord.	6/3	3/–	3/3	3/3
2/-	„ „ 'A' Ord.	5/–	2/3	2/6	2/3
£1	„ „ 5% 1st Pref.	13/3	11/3	12/–	12/–
5/-	Rubber Reg. Ord.	18/3	12/3	12/3	12/3
4/-	Shaw Francis Ord.	24/6	12/3	12/3	12/6
£1	Shell Ord. (Reg.)	140/–	108/–	113/9	117/3
2/-	Silentbloc Ord.	10/6	7/3	8/–	8/–
5/-	Storey Bros.	46/–	26/9	28/3	28/9
2/-	Sussex Rubber Ord.	2/7½	1/9	1/9	1/9
5/-	Sutcliffe Speak Ord.	18/6	12/6	12/6	12/6
£1	Tootals	35/6	22/9	24/3	23/6
£1	Turner & Newall Ord.	78/–	55/–	60/–	58/3
£1	„ „ „ 7% Pref.	21/6	19/–	20/3	20/–
5/-	Universal Asbestos Ord.	27/–	20/–	21/–	21/6
£1	Venesta Ord.	76/–	55/9	61/9	63/–
5/-	Viscose Dev. Ord.	16/3	13/3	14/3	14/9
5/-	Warne W. (Holdgs.) Ord.	21/6	14/9	17/6	18/–

Rubber Markets

LONDON

The UK rubber market has taken a decided turn for the better during the week ending December 6. Values finally stood at an average balance of ¾d. per lb.

Following a slight reaction early in the period, the main supporting influence, apart from firmer origin cables, was the continuation of an extremely good demand (which was privately considered to have originated from Yugoslavia) for afloat and nearby shipment rubber, the order apparently being covered in on landed.

Additionally moderate Continental factory offtake for various sheets helped to consolidate the rise, while increasing political tension over the latest developments in the Katanga situation was yet another factor for the overall improvement, traders said.

Business in the landed positions was, however, disappointly small during the week, but as market sources pointed out, the bulk of attention had been switched to cif.

Latest prices are as follows:

No. 1 RSS spot: 23d.-23¼d.

Settlement House:

January 23¼d.-23⅜d.
February 23⅜d.-23½d.
March 23⅜d.-23½d.
January/March 23⅜d.-23½d.
April/June 23⅜d.-23½d.
July/September 23½d.-23⅝d.
October/December 23⅞d.-24d.

No. 1 RSS cif basis ports:

December 22¾d.-23d.
January 23d.-23¼d.

Godown:

December 76⅛ buyers (Straits cents).

LATEX

Centrifuged 60% latex per gallon in drums, seller, January, 13s. 6d., cif European ports. Spot, seller, 14s. Bulk, seller, d.w. 13s. 7d. Normal, seller, January, 10s. 6d.

AMSTERDAM

The Amsterdam rubber market ruled as under on December 4:

	Guilders per kilo	
No. 1 RMA	Dec. 4	Previous
December ..	2.16	2.14
January	2.16	2.14
February	2.16	2.14
March	2.16	2.14
Jan./March ..	2.16	2.14
April	2.16	2.16

Sales: Nil. Tendency: Quiet.

DJAKARTA

	Rupiahs per kilo	
	Dec. 4	Previous
Spot No. 1 Priok ..	41.75b	41.75b
Spot No. 2 Priok ..	40.75b	40.75b
Spot No. 3 Priok ..	39.75b	39.75b
Spot No. 1 fine pale crepe	38.25b	38.25b

Tendency: Steady, quiet.

NEW YORK

The New York rubber market ruled as under on December 4:

DEALERS' PRICES

	US cents per lb., ex-dock	
	Dec. 4	Previous
No. 1 RSS, Dec.	27⅜b–27½a	27⅛b–27¼a
Jan.	27⅛b–27¼a	27⅛b–27¼a
No. 2 RSS, Dec.	27⅛b–27¼a	27⅛b–27¼a
Jan.	27⅛b–27¼a	27⅛b–27¼a
No. 3 RSS, Dec.	27b –27⅛a	26⅞b–27⅛a
Jan.	26⅞b–27⅛a	26⅞b–27⅛a
No. 1 RSS, Spot	27⅜n	27⅜n
No. 3 amber blanket crepe, Dec.	26n	26n
No. 1 latex, thin crepe, Dec. ..	—	—
No. 1 latex, thick crepe, Dec. ..	—	—

FUTURES—REX CONTRACT

	Dec. 4	Prev. Close
Jan. ..	27.73b–27.80a	27.60b–27.75a

Sales: 15. Tendency: Steady.

Futures were steady on December 4 in modest dealings on covering and new buying. Traders said that consumers and dealers bought physical rubber modestly, consumers buying mainly ambers and browns but also some ribbed sheets. In the closing stage, futures held steady. Dealings for the day were modest.

SINGAPORE

Prices were marked up at the opening on December 4 but there was little incentive to trade and conditions were very quiet. Price movements were small. Demand for lower sheets was small and selective. The market was quiet during the afternoon. After the official close, prices eased slightly on small selling in quiet conditions.

	Malayan cents per lb., fob Malayan ports to open ports	
	Dec. 4	Prev. Close
No. 1 RSS, Dec. ..	75¼–75½	75¼–75½
Jan. ..	75⅞–76⅛	75⅛–76⅛
No. 2 RSS, Dec. ..	74 –74½	74 –74½
No. 3 RSS, Dec. ..	73½–73¾	72⅛–73⅛
No. 4 RSS, Dec. ..	72½–73	72 –72½
No. 5 RSS, Dec. ..	70½–71⅛	70½–71⅛
No. 1 RSS, prompt	74⅞–75⅛	74⅛–75⅛
No. 3 blanket thick remilled crepe, Dec.	72¼–73⅛	72 –73
No. 1 fine pale crepe, Dec. ..	83¾–84½	83⅛–84
2X thin brown crepe (Estate), Dec. ..	70¼–71¼	70 –71

Tendency: Quiet.

CEYLON

The price of No. 1 RSS at Colombo on December 4 was 94¼ Ceylon cents per lb.

BANGKOK

The price of No. 1 RSS at Bangkok on December 4 was 25.25 (24.75) US cents per lb.

Raw Material Prices

Owing to pressure on space, this monthly feature has been held over and will be published next week.

PLASTICS MACHINERY DEVELOPMENTS

Continued from page 952

can be arranged to apply an inner or an outer band of heat-sealing material in addition to the overall wrapper. A tear tape unit can be included, and a top labelling unit is also available.

After the object has been placed on a conveyor belt, the operations are carried out automatically. It is pushed forward by an infeed paddle and then the various wrapping operations take place. Discharge pushers then eject the article which automatically brings fresh wrapping material from a reel for the next operation.

Wrapped articles are discharged at the rate of between 15 and 35 per min. Adjustment for different package length is readily made by means of two hand wheels and variations in height and width are accommodated by a self-measuring paper feed.

The Rose XLG is a machine for over-wrapping small cartons of cigarettes, medicine and sweets, etc. It wraps in either cellulose film or laminated heat sealing materials. A tear tape can be incorporated and the output varies from 160-200 per min.

Manchester Dinner

The Manchester section of the Institution of the Rubber Industry will hold its annual dinner-dance at Belle Vue, Manchester, on Friday January 19 1962.

Tickets (30s. each) are available from the secretary, L. D. Gill, Anchor Chemical Co. Ltd., Clayton, Manchester 11.

Polly Ester Says...

'Hycar—on the Chiswich flyover'

Industry INTELLIGENCE

Technical Data

SBR Retreading

Technical Information Sheet Rubber PC/R.73, issued by the Polymers and Chemicals Service Department, Dyestuffs Division, I.C.I. Ltd., describes the use of the 'high black/high oil' technique for the production of tyre retreading materials.

Currently the typical camelback compound is made from cheap oil-extended grades of SBR, either alone or in blends with non-extended SBR. One method of effecting economy is to extend the compound with higher amounts of both carbon black and process oil than are used on nine conventional tread compounds.

Some examples of this technique are described in the pamphlet and the recommendation is made that compounds containing at least 62.5% of black plus the appropriate amount of oil are suitable for this application.

Montorate TU

A recent addition to the range of rubber chemicals available from Monsanto Chemicals Ltd., 10-18 Victoria Street, London, S.W.1, is Montorate TU, described in Technical Service Bulletin No. AB3/1.

Montorate TU, chemically trimethyl thiourea, is an accelerator for non-sulphur modified polychloroprene rubbers. It combines fast rates of cure with greatly improved protection against scorch.

The Bulletin is a laboratory report showing the results of evaluation of Montorate TU in a Neoprene Type W compound against other established accelerator systems. It was found to give longer Mooney scorch times, faster rate of cure, lower compression set values and good physical properties. Accelerated ageing tests have indicated that the stocks maintain their good physical properties.

PTFE Hose and Tape

William Rose Ltd., Hilyn Works, Lockfield Avenue, Brimsdown, Middlesex, has recently introduced a new range of descriptive literature.

Three brochures describe in detail the range of ptfe products made by the company. Hilflon hose assemblies, Hilflon thread-sealing tape and the Hilyn self-sealing swivel joint made by Hilyn Industrial Equipment Ltd., an associate company.

Hilflon ptfe flexible hose has excellent life and can be used at temperatures from −70°C. to 230°C. or higher in contact with most chemicals. Hilflon unsintered ptfe tape is designed to function as a thread sealant in ribbon form and is available in compact rolls from which it is readily dispensed and can be used under the same temperatures and environmental conditions mentioned above.

Pronar Heat Promoter

Chem Lines, Vol. 10, No. 5, published by American Cyanamid Co., Rubber Chemicals Department, Bound Brook, New Jersey, includes the results of a laboratory study on butyl rubber modified with Pronar.

Pronar is useful as a heat promoter for butyl rubber and is non-discolouring. Other advantages claimed for the material are improved physical and application properties for both white and light-coloured stocks. By the use of Pronar, butyl compounds can be produced with physical properties more closely competitive to current non-butyl compounds such as SBR.

Machines, Materials and Equipment

Temperature Baths

Shandon Scientific Co. has introduced a new range of constant temperature baths and circulators for both high and low temperature applications in the range −80°C. to +300°C. The units are particularly suitable for use as 'reservoirs' of constant temperature

liquid for circulation to external apparatus such as viscometers, refractometers, calibrating baths, etc.

The range comprises Ultra-Thermostat high precision units for use in the range −60°C. to +300°C.; Ultra-Kryostat high precision low-temperature models (−80°C. to +40°C.); and Ultra-Kryomat low-temperature units (−80°C. to +20°C.) for use where extreme accuracy is not required.

Ultra-Thermostats, with operating accuracies in the order of ±0.01-0.03°C., are available in some 30 different models — as circular baths (2¼ to 3 litres capacity), rectangular baths (12 to 35 litres capacity), immersion units and bridge units for mounting across open baths.

Ultra-Kryostats are available in eight floor-mounted models with accuracies in the range ±0.02-0.05°C. All incorporate 20-litre baths, the difference lying in their operating temperature ranges and cooling rates.

The six Ultra-Kryomat models include two table models with 7-litre baths and four floor-mounted models with 20-litre baths. Accuracies are in all cases ±0.2-1.0°C.

Publications

Mica Powder

Mica Products and Insulation Co. (Pty.) Ltd., Industrial Sites, Ladysmith, Natal, South Africa, has issued a leaflet relating to the green muscovite water ground mica powder which it is micronizing in Africa by the fluid energy micronizing process.

The Muscovite Mica which is employed in the manufacture of Scintilux powders is mined in the North-Eastern Transvaal province of South Africa. This mica is characterized by its lustrous green appearance and soft texture which renders it particularly suitable for grinding.

The leaflet describes its manufacture, properties, recommended application, and specification.

Tyglas in Industry

Fothergill and Harvey Ltd., Littleborough, Lancs., has published a new handbook on the use of glass textiles in industry.

The book introduces Tyglas in its many forms, starting with properties and types of weave and construction.

Seventy-nine cloths are listed in order of weight and thickness to enable instant selection. Typical laminate results with different resins and finishes on standard cloths, and finish recommendations for various applications are also given.

Finally, the use of Tyglas in the electrical and other industries and Tygafloor ptfe-coated Tyglas are described. Copies of the handbook are available from the company.

Glycerine Applications

Glycerine News, issued by the UK Glycerine Producers Association Ltd., 5 Bridewell Place, E.C.4, describes new applications of glycerine listed in patent specifications and other published sources.

Issued No. 29, September 1961, includes details of glycerine used in a new technique to photograph the internal structure of blood cells, in polyurethane foam components, and glycerine derivatives aiding corrosion testing.

The issue also gives news of epoxidized acetylated glycerides, for instance lard oil monoglyceride, diacetate, used as plasticizers for polyvinyl resins.

Future Events

Institution of the Rubber Industry

Manchester Section. — December 11 at the Engineers' Club, Albert Square, Manchester, at 6.45 p.m. 'Technical Department Organization and Associated Problems', by S. A. Hardman, (BTR Industries Ltd.).

Midland Section. — December 11 at the College of Technology, Gosta Green, Birmingham, at 5 p.m. 'Tyres for the World Speed Record', by D. W. Badger (Dunlop Rubber Co. Ltd.). At 6.45 p.m. 'Steelcord as a Reinforcing Material', by F. Ryckebosch (Bekaert Steel Cord).

Preston Section. — December 11 at BTR Industries Social Club, Farington, Preston, at 7.15 p.m. 'The Frying Pan Specimen', by Messrs Beazley and Cook (English Clays Lovering and Pochin Co. Ltd.).

Leicester Section. — December 12 at the Grand Hotel, Leicester, 7 p.m. 'Polymers for the Space Age', by Dr N. H. Langton.

London Section. — December 12 at the Royal Society of Tropical Medicine and Hygiene, Mansion House, 26 Portland Place, London, W.1, at 5.30 p.m. 'Synthetic Latex in Foam Rubber' by A. D. Wilson (Vitafoam Ltd.). At 7 p.m., 'Application of Synthetic Latices', by B. A. Johnstone (Sto-Chem Ltd.).

Scottish Section. — December 12 at the Scottish Building Centre, 425-427 Sauchiehall Street, Glasgow, C.2, at 7.30 p.m. 'Recent Developments in Butyl Polymers', by P. E. C. Davies, (Esso Petroleum Co. Ltd.).

Southern Section. — December 13 at the Polygon Hotel, Southampton, at 7.30 p.m. 'The Processing of General Purpose Styrene — Butadiene Copolymers', by R. Hickson (International Synthetic Rubber Co. Ltd.).

West of England Section. — December 13 at the George Hotel, Trowbridge, at 8 p.m. 'The Use of Non-Metallic Components in the Automobile Industry', by A. E. Bray (Morris Motors Ltd.).

Humberside Section. — December 14 at the Yarborough Hotel, New Holland, at 7.45 p.m. 'Safety in Rubber Factories', by H. Jackson, MSc (Leyland and Birmingham Rubber Co. Ltd.).

Plastics Institute

Scottish Section. — December 12 at Kenilworth Hotel, Glasgow, at 7.30 p.m. 'The Use of Polymers for Paper Coating', by J. R. Young (The Metal Box Co. Ltd.).

Yorkshire Section. — December 13 at the Bradford Institute of Technology, at 7.30 p.m. 'Recent Developments in Acetal Resins', by A. S. Matthews (Du Pont Co. (UK) Ltd.).

Export Opportunities

In each case manufacturers should write direct, informing the British Trade Commissioner, whose address appears at the end of each item, that they have done so.

Household Plastics: Plastics Toys

Hutchinsons (Fiji) Ltd. of GPO Box 287, Suva, wish to represent British manufacturers of low to medium-priced household plastics and low to medium-priced plastics toys.

The Commerce and Industries Office, The Secretariat, Suva, Fiji. (Ref. ESB/36145/61.)

Machinery, Raw Materials

Oscar Huber and Co., of Bahnhofstrasse 42, Zurich, wish to obtain Britisn agencies for extrusion and mixing machinery for the rubber trade, injection moulding machines, and raw materials for the plastics trade.

The British Consulate-General, Dufourstrasse 56, Zurich. (Ref. ESB/36143/61.)

Yarn, Foam and Resins

Revesto — Fornecedores de Revestimentos Lda., Rua Sociedade Farmaceutica, 30-2°-D, Lisbon, wish to get in touch with British manufacturers of polyester, acrylic and nylon fibres, acetate yarn, plastics foam, synthetic resins, and artificial raffia.

The Commercial Counsellor, British Embassy, Rua Sao Domingos A Lapa, 37, Lisbon. (Ref. ESB/32447/61.)

CLASSIFIED ADVERTISEMENTS

RUBBER AND PLASTICS WEEKLY

ADVERTISERS

PLEASE NOTE CHRISTMAS PUBLISHING ARRANGEMENTS

We close for press December 12th for our December 16th issue and December 18th for our December 23rd issue. POST EARLY ! ! !

APPOINTMENTS VACANT

8d. a word. Minimum 12/- Box 2/-

ASSISTANT plant engineer required by rubber manufacturers situated in Hertfordshire. Previous experience desirable of maintenance of machinery for the production of mandrel made braided hose, mouldings and mechanicals, and applicant must have previous general engineering experience in a rubber manufacturer's plant. Essential to have qualifications of AMIMechE or HNC level. For the successful candidate this post carries good prospects for very quick promotion, with ultimate responsibility for plant installation and maintenance, equipment design, development and all engineering staff. Applicant who is married and aged between 25 to 35 years will be preferably considered. Accommodation available after promotion. Contributory pension scheme, canteen facilities and bonus scheme.— Apply giving full details of age, education and experience to Electric Hose and Rubber Co. Ltd., Harpenden, Herts. (073)

APPOINTMENTS VACANT

(continued)

RUBBER technologist. Oil company specialising in process oils for the rubber industry, is extending its rubber laboratory to provide greater technical assistance to its customers, and requires a rubber technologist to undertake research into the use of oils in relation to the various processes in the industry. Excellent opportunity with medium sized private company for a man with a minimum of five years in the rubber industry, embracing practical and laboratory experience, added to which a knowledge of oils and chemicals would be an advantage.—Write in confidence giving personal and industrial details to The Chairman, British Solvent Oils Limited, Mount Street, Accrington, Lancashire. (225)

DU PONT

REG. U.S. PAT. OFF.

LABORATORY TECHNICIAN

Technician required by Elastomers Research Laboratory. Practical experience in laboratory and/or factory rubber processing equipment essential. Preferred age group 25-40. Contributory Pension Scheme, free life insurance, 37½ hour week. Apply to :—

The Laboratory Manager,
Du Pont Company (United Kingdom) Limited
Elastomers Research Laboratory,
Maylands Avenue, Hemel Hempstead, Herts. (220)

APPOINTMENTS VACANT

For our

INTERNATIONAL ENGINEERING

and

PLANNING DEPARTMENT

in

VIENNA

in the field of rubber processing, we require

Designing engineers, time and motion experts, works engineers, process control technicians, rubber technologists, and draughtsmen.

Applicants with practical experience preferred.

SEMPERIT

Österreichisch - Amerikanische Gummiwerke Aktiengesellschaft

9-15, Helferstorferstrasse · Vienna I · Austria

(221)

EXTRUDER. Charge-hand required for development work in connection with modern extruder. South London area.—Apply Box 222. (222)

BTR

require

at

FARINGTON Nr. PRESTON

SENIOR CHEMIST (Ref. SC/F)

To take charge of a small section engaged on Rubber compounding and Thermoplastic problems.

RUBBER DEVELOPMENT TECHNOLOGIST (Ref. RDT)

For work on Rubber compounding development and product development—particularly on conveyor belts and high pressure hose.

DEVELOPMENT ENGINEER (Ref. DE/F)

For machine design and experimentation.

Candidates should:—

Have a minimum of 3 years' relevant experience;
Hold AIRI, LIRI, ARIC, BSc Chem or Eng or AMIMechE;
Be age group 24-40.

The Company offers:

High salaries—commensurate with qualifications and experience. Good conditions and prospects.

Send tabulated career details to:—

M. S. ALLEN,
Central Personnel Department,

BTR INDUSTRIES LTD

Herga House,
Vincent Square,
LONDON, S.W.1. (218)

APPOINTMENTS VACANT

RUBBER — ESTABLISHED 1912 — PLASTICS

LINDSAY AND WILLIAMS LIMITED

MANCHESTER 11

REQUIRE A QUALIFIED

CHIEF CHEMIST

AGED 27-35 YEARS: EXPERIENCE IN COATING OF TEXTILES ESSENTIAL

GOOD SALARY AND PENSION SCHEME

(195)

A CHEMIST is required for a development laboratory in the North London area. The laboratory deals in adhesives plastics materials, pigments and various rubbers. Sound reasoning on development projects is the main requirement. Salary range £900-£1,250.—Candidates over 23 years of age should apply with full details of experience and qualifications to Box 223. (223)

VACANCY in expanding rubber factory situated South London for experienced foreman in calender and mixing shop. Experience in press shop an advantage. Excellent opportunity for right applicant. Salary according to experience. Bonus and pension scheme in operation.—Apply in confidence to Box 214. (214)

PIRELLI

LIMITED

have a newly created vacancy for a

RUBBER TECHNOLOGIST

in

FOOTWEAR

The work will principally be concerned with investigating production problems in the use of Sponge Rubber compounds. We need, therefore, a resourceful young man of action, with the ability to make his mark in a progressive Footwear Management team. Previous experience of Footwear Production, either on the shop floor or in a laboratory, would be an advantage.

Apart from an attractive starting salary and excellent pension and life assurance arrangements, a substantial contribution towards removal and other expenses is available in appropriate cases.

Those interested should address a concise letter, stating age, education and experience to the Personnel Officer, Pirelli Limited, Derby Road, Burton-on-Trent.

(219)

APPOINTMENTS VACANT

(continued)

QUALIFIED chemist required for senior laboratory appointment. Applications are invited from chemists with technical experience in the compounding of rubber, plastics, etc., process and quality control, and wi.h knowledge of textiles. Accommodation arranged if necessary.—Write stating age, salary and full details to Kagan Textiles Ltd., Gannex Mills, Elland, Yorkshire. (226)

RUBBER technologist required by old-established rubber hose manufacturers in Hertfordshire for process control and laboratory development. Suitable for young man of 20/25 years, but must be semi-qualified to LIRI standard. Time will be allowed for study to AIRI level in London. Excellent prospects are offered to a man showing keenness, energy and with ability to shoulder responsibility. Contributory pension scheme, canteen facilities, good salary and bonus scheme.—Apply giving full details of age, education, training and experience to Electric Hose and Rubber Co. Ltd., Harpenden, Herts. (072)

APPOINTMENTS WANTED

8d. a word, Minimum 12/- Box 2/-

WORKS manager, early forties, 28 years' practical experience mill room practices, extruding tank/pipe lining, moulding, hand made mechanicals, etc. Desires change. South preferred.—Box 224. (224)

This column can be YOUR best BUYER or SELLER

RUBBER & PLASTICS

MACHINERY

Why not see for YOURSELF

MACHINERY FOR SALE

8d. a word, Minimum 12/- Box 2/-

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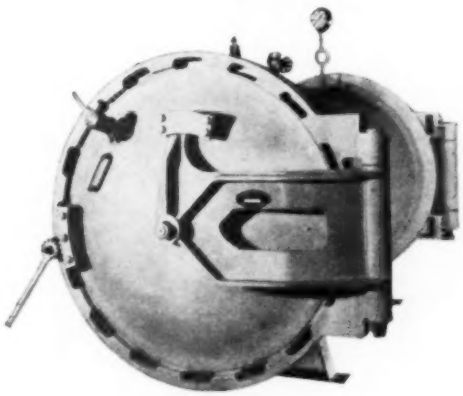

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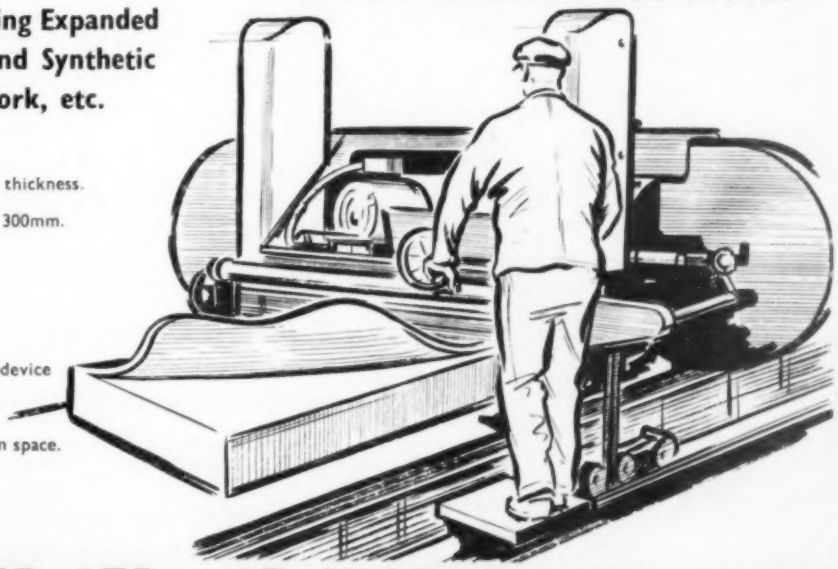

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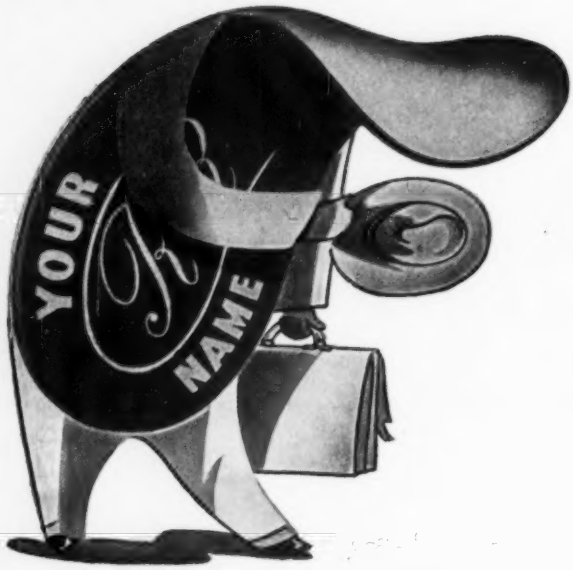

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